VOLUME LIII NUMBER FIVE

THE NATIONAL GEOGRAPHIC MAGAZINE

MAY, 1928

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By N. C. WYETH

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ORGANIZED FOR "THE INCREASE AND DIFFUSION OF GEOGRAPHIC KNOWLEDGE"

TO carry out the purposes for which it was founded forty years ago the National Geographic Society publishes this Magazine. All receipts are invested in the Magazine itself or expended directly to promote geographic knowledge.

ARTICLES and photographs are desired. For material which the Magazine can use, generous remuneration is made. Contributions should be accompanied by an addressed return envelope and postage.

IMMEDIATELY after the terrific eruption of the world's largest crater, Mt. Katmai, in Alaska, a National Geographic Society expedition was sent to make observations of this remarkable phenomenon. Four expeditions have followed and the extraordinary scientific data resulting given to the world. In this vicinity an eighth wonder of the world was discovered and explored—"The Valley of Ten Thousand Smokes," a vast area of steaming, spouting fissures. As a result of The Society's discoveries this area has been created a National Monument by proclamation of the President of the United States.

AT an expense of over $50,000 The Society sent a notable series of expeditions into Peru to investigate the traces of the Inca race. Their discoveries form a large share of our knowledge of a civilization waning when Pizarro first set foot in Peru.

THE Society also had the honor of subscribing a substantial sum to the expedition of Admiral Peary, who discovered the North Pole.

NOT long ago The Society granted $25,000, and in addition $75,000 was given by individual members to the Government when the congressional appropriation for the purpose was insufficient, and the finest of the giant sequoia trees of California were thereby saved for the American people.

THE Society is conducting extensive explorations and excavations in northwestern New Mexico, which was one of the most densely populated areas in North America before Columbus came, a region where prehistoric peoples lived in vast communal dwellings and whose customs, ceremonies, and name have been engulfed in an oblivion.

TO further the important study of solar radiation in relation to long-range weather forecastings, The Society has appropriated $60,000 to enable the Smithsonian Institution to establish a station for four years on Mt. Brukkaros, in Southwest Africa.

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THROUGH PATHLESS SKIE

Under the golden glow of a midnight sun, the valiant Byrd, emp
reach, with wingèd speed, that goal which his com

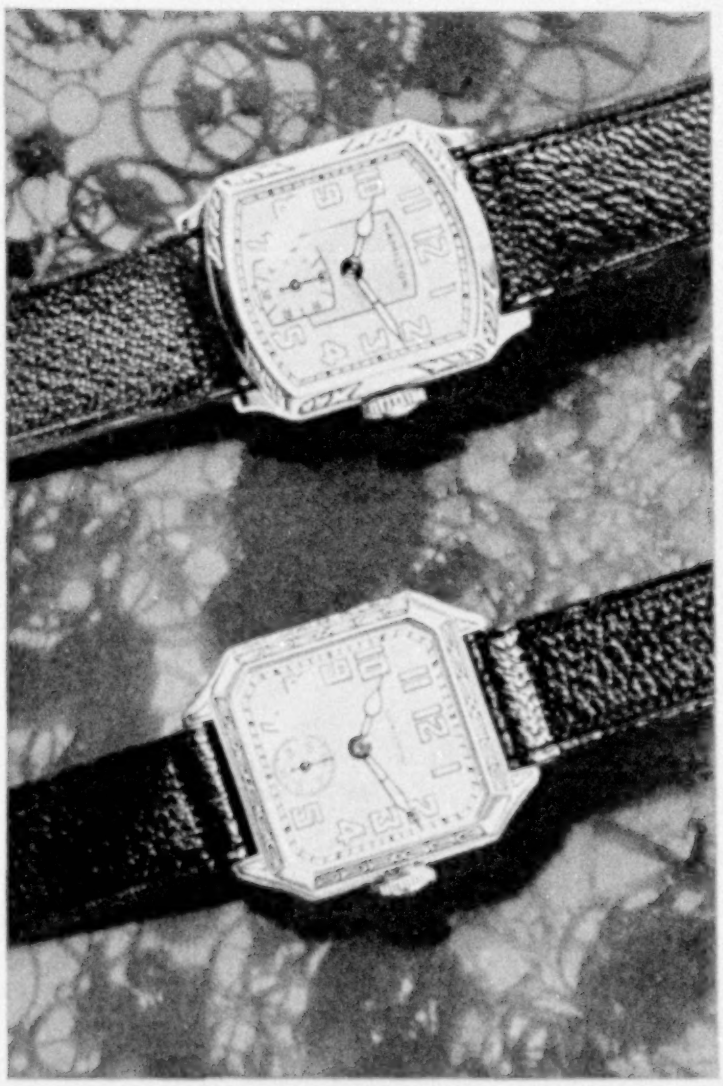
IES TO THE NORTH POLE

nploying Geography's newest ally in exploration, is the first to
mpatriot, the intrepid Peary, had won, foot by foot.

ONE OF A SERIES OF FIVE MURALS BY N. C. WYETH
NATIONAL GEOGRAPHIC SOCIETY HEADQUARTERS
WASHINGTON

What Gift

will recall this scene eventful years from now?



WHAT definite remembrance will this young man and this young woman still carry when the class of 1948 come forward for *their* degrees?

If a Hamilton Watch accompanies the young graduate down from the platform, it will be looked at not once but a dozen times every single day.

Often it will recall this scene. Always the wearer will know accurately, exactly, confidently—just what time it is.

There is a thrill in first possessing a Hamilton that the wearer never does quite get over. At first its accuracy seems nothing short of amazing. And then, as the years come and go, you grow to depend upon it as a friend who simply does not know how to tell you anything but the truth.

The Hamilton has justly earned its title, "the watch of railroad accuracy," not by chance, but because railroad regulations demand that trains be timed by watches of *known* accuracy.

Would you like to glance over an interesting booklet showing some of the beautiful new Hamilton models and telling about the care with which they are made? Write for a free copy of "The Timekeeper." Hamilton Watch Company, 882 Columbia Avenue, Lancaster, Pennsylvania.

Hamilton

THE WATCH of

Railroad Accuracy

Upper, *The TONNEAU. There's a hint of tomorrow in the outline and engraving of this mannish strap. In either filled or 14k green or white gold. Plain or engraved, from $55 to $87.*

Lower, *The SQUARE. A shape in increasing favor. Filled or 14k plain or engraved cases. $55 to $87.*

Hamilton Wrist Models for women start at $48.

LA SALLE

COMPANION CAR TO CADILLAC

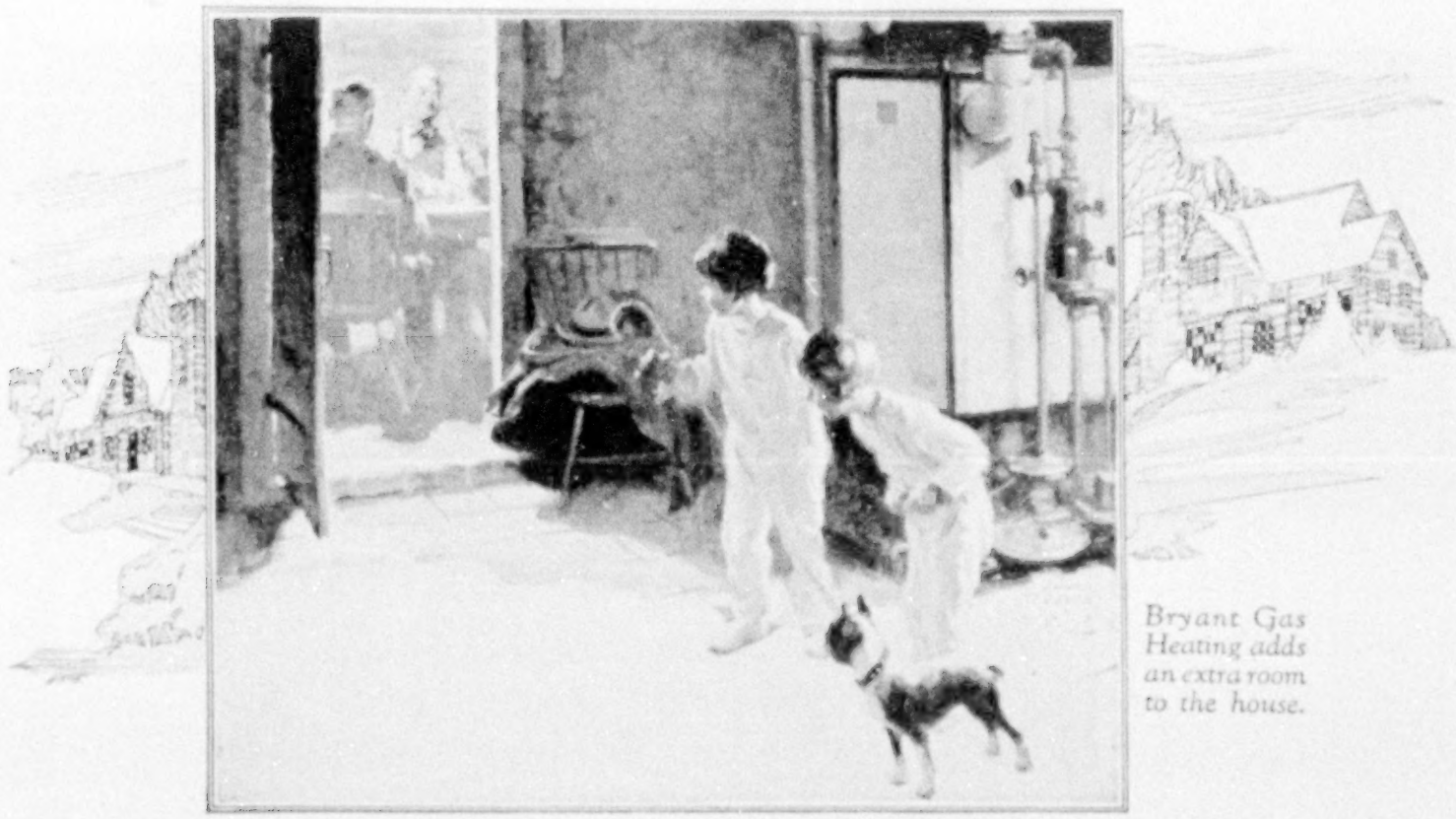
CAR of cars, the La Salle, for those attuned to this new, vigorous day—for those who live life to the full. Brilliant in performance, it is built indeed for this breathless, brightly-colored age. A supremely great car because of the flawless coordination of the mechanism of its 90-degree, V-type, 8-cylinder engine—an engine without peer in any kind of going. A supremely beautiful and luxurious car because of its bodies by Fisher and by Fisher-Fleetwood.

1928 prices substantially lower on the entire La Salle line—from $2350 to $2875, f. o. b. Detroit. Five new models—including new five-passenger family sedan.

CADILLAC MOTOR CAR COMPANY

Division of General Motors Corporation

Detroit, Michigan Oshawa, Canada



Bryant Gas Heating adds an extra room to the house.

Where the "Pup is Furnace Man"

It's More of a Pleasure to Entertain — and be Entertained

NO one needs to apologize for temperature discomforts in the Bryant heated home. Chilliness is unknown; and there is no overheating.

Bryant Gas Heating will provide ample, uniform warmth—thermometer-measured to a single degree of the temperature you prefer for day-time warmth and night-time coolness. This exact, unvarying comfort is secured with no more furnace tending than a pup can provide—the entire heating system is no more care or bother than a good, 8-day clock!

From Fall until Spring the heating plant takes care of itself—a pup can be your furnace man.

You will have no fuel to store or shovel; no ashes, dust or dirt; no noise of roaring oil flames or odors. Throughout the entire house, you will enjoy a new order of cleanliness. Wall paper, curtains, upholstery, furniture and woodwork, all respond to the absolute cleanliness of Bryant Gas Heating.

It is a surprise to most people to find how very moderate in cost the glorious luxury of Bryant Gas Heating really is, if you live in a community enjoying average-price gas.

If you would like a reliable estimate of the cost of Bryant Gas Heating for your particular home, the nearest of our 37 local offices will gladly see that it is provided.

Or, perhaps you would like a booklet describing gas heating in full detail? Just mail a note to

THE BRYANT HEATER & MFG. CO.
17903 St. Clair Avenue CLEVELAND, OHIO

BRYANT GAS HEATING

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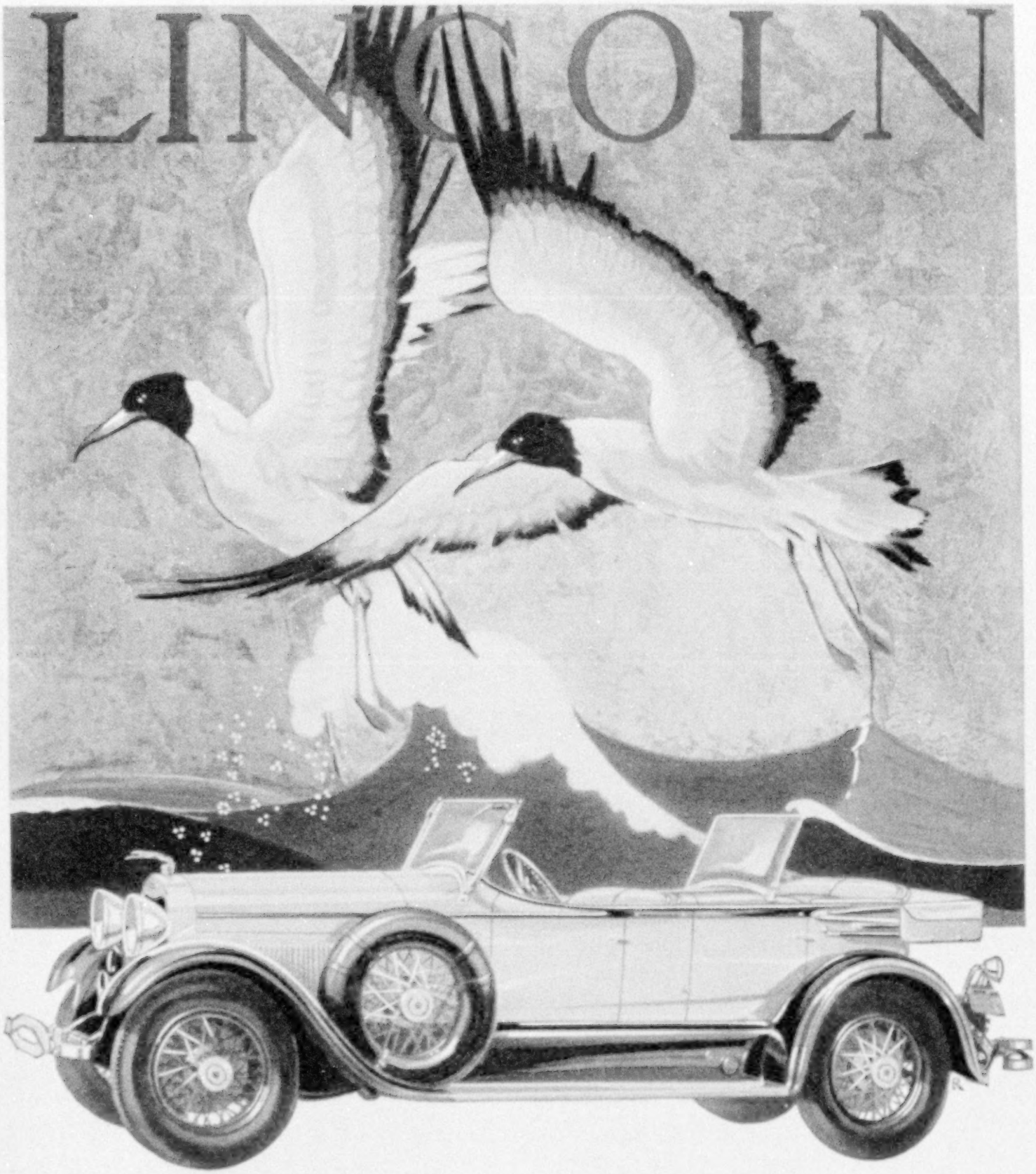


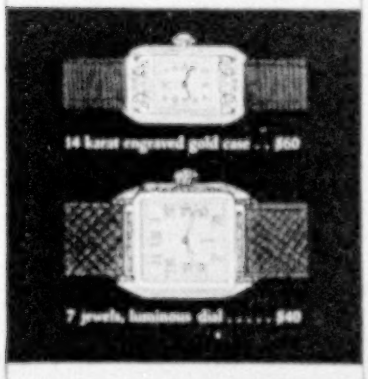
Sport Phaeton (by Locke)

The spirited beauty of the Lincoln Sport Phaeton suggests the easy grace and speed of the sea-gull. Just as the swift passage of the bird is free of conscious effort, so the resources of Lincoln power are obedient to your every need with equal freedom from effort. Acceleration that masters every traffic problem, speed that fears no challenge, ease of control that gives full confidence to meet emergency — these are prime qualities of Lincoln performance. They are admirably expressed in every carefully selected detail of appointment and rich finish and in every line and graceful curve of this Locke design.

L I N C O L N M O T O R C O M P A N Y
Division of Ford Motor Company

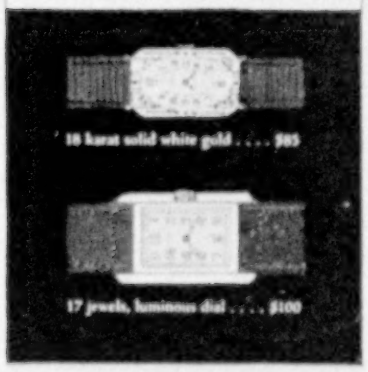
This solves the Graduation Gift problem

FOR BEAUTY . . ELGIN



FOR DEPENDABILITY . . ELGIN

FOR CHARACTER . . ELGIN



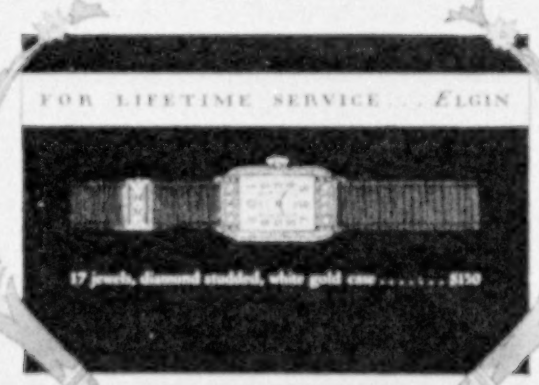
THIS DAY of a lifetime should be honored by a lifetime gift. And what sounder choice could you make than an Elgin watch! It has all the qualities you would have in that graduation presentation to your boy or girl . . . Modern beauty, new-day style, unfailing accuracy and lifelong usefulness. These and other new models may be seen at your jeweler's . . . *Elgin prices range from* $15 *to* $1500; *and each watch, at whatever price, carries the Elgin guarantee.*

Elgin National Watch Company,
Elgin, U. S. A.

ELGIN

THE WATCHWORD
FOR EFFICIENCY AND
ELEGANCE

FOR LIFETIME SERVICE . . . ELGIN



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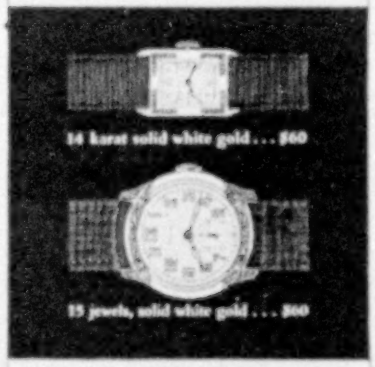
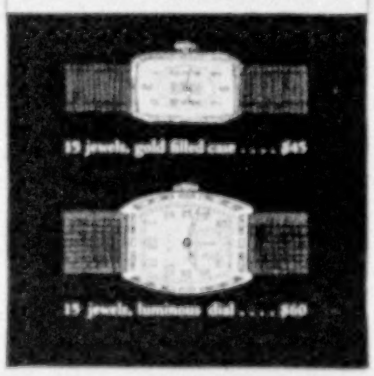
FOR NEW-DAY STYLE . . ELGIN

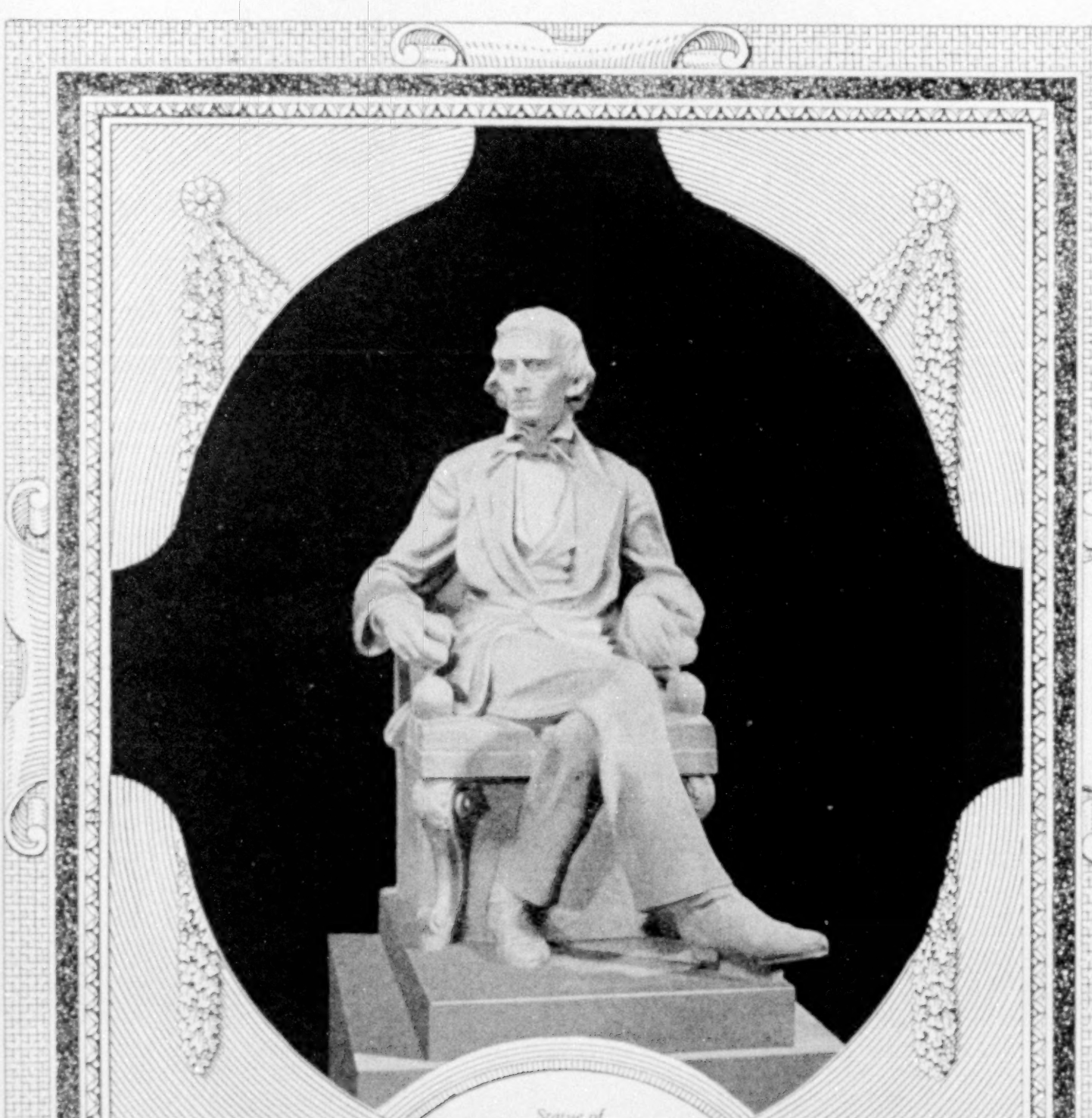


FOR STURDINESS . . . ELGIN

FOR ACCURACY . . . ELGIN



[All prices slightly higher in Canada]



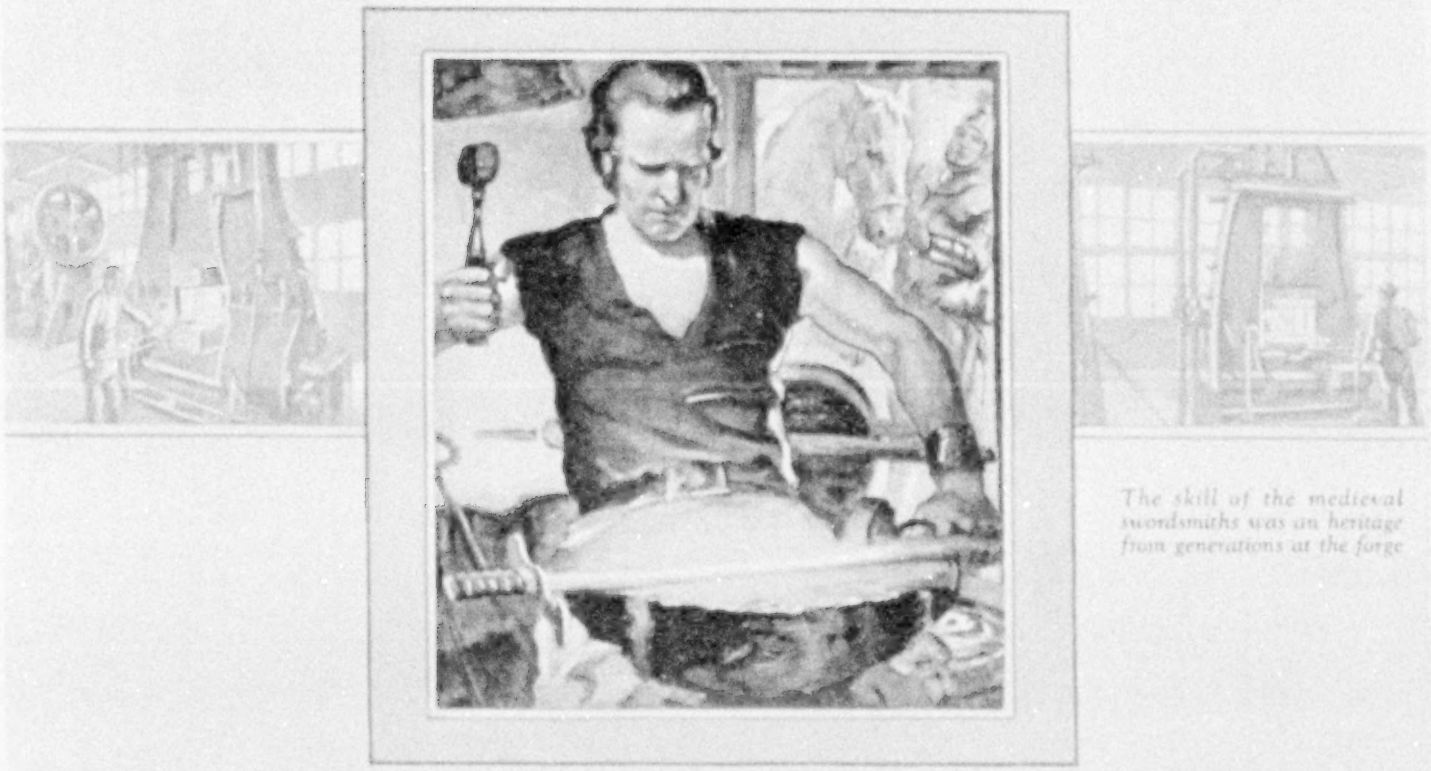
Statue of
ALEXANDER H. STEPHENS
Gutzon Borglum
Sculptor

"THE little pale star from Georgia"—who brought honor to his Commonwealth as representative, congressman and governor of his State. The lifelike expression and naturalness of this figure, which stands in Statuary Hall at the National Capitol, is a tribute not only to the genius of the sculptor, but to the beautiful white Georgia Marble of which it is carved. Write today for our new memorial booklet—"That Memory May Live Forever."

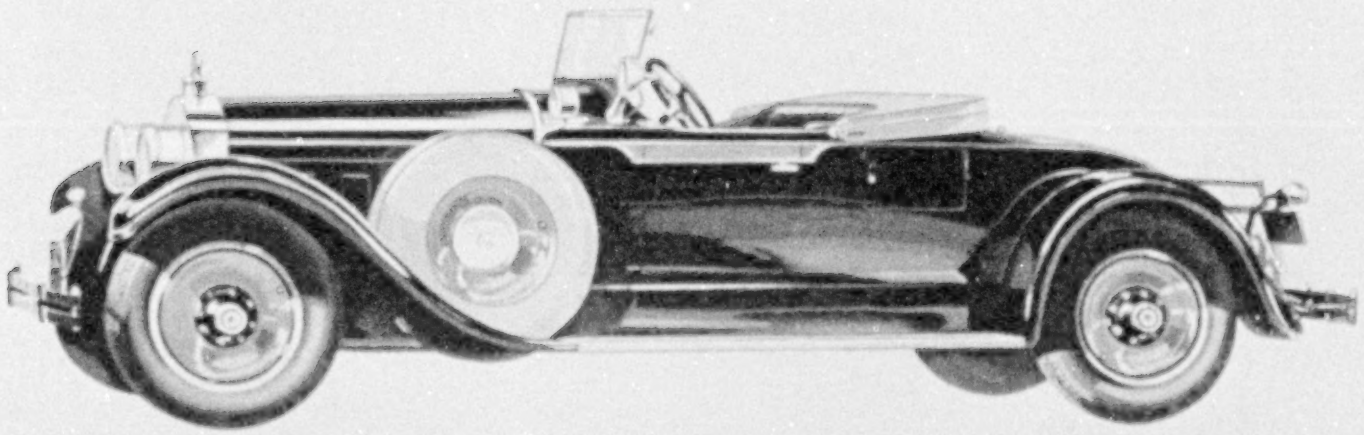
THE GEORGIA MARBLE COMPANY, Tate, Ga.

Chicago, *Monadnock Bldg.* New York, *Marbridge Bldg.* Atlanta, *Bona Allen Bldg.*

GEORGIA · MARBLE



The skill of the medieval swordsmiths was an heritage from generations at the forge



PACKARD crankshafts, gears, axles—and all of the many forgings so vital in upholding the Packard reputation for performance and long life—are fashioned with supreme skill and the most modern of precision equipment.

Batteries of huge drop forges, with their costly dies, shape selected steels into Packard parts with a speed and exactness unknown to the craft but yesterday. For while the forging of metal is as old as history, only with the perfection of modern tools—in which Packard has long held leadership—has drop forging reached its highest development.

Every Packard part must conform to Packard's inflexible standards. Fine materials, fine craftsmen, fine tools—these are factors which for nearly thirty years have made the Packard the favored car of the world's first families.

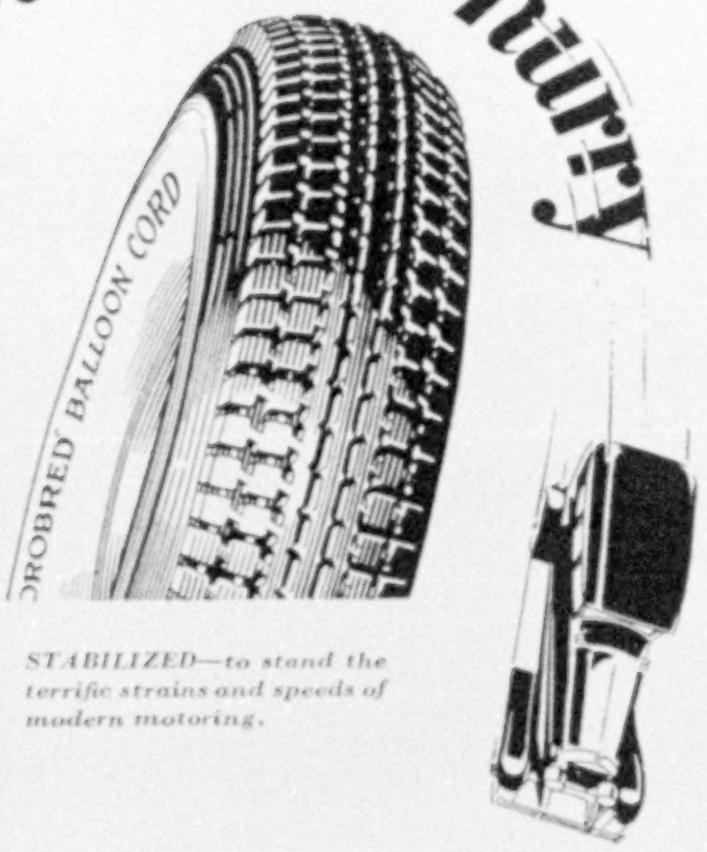
Packard cars are now priced from $2275 to $4550. Individual custom models from $3875 to $8725, at Detroit

PACKARD

ASK THE MAN WHO OWNS ONE

for the man who *steps* on the gas-*jams* on the brakes—

—takes corners in a hurry



STABILIZED—to stand the terrific strains and speeds of modern motoring.

TIRES built on yesterday's pattern won't do. Today you have quick starting, fast traveling, sudden turning at high speed, instant stopping with four-wheel brakes. These things put a tremendous strain on tires. Strain that may easily result in a blowout—disaster!

Dayton Stabilized Balloons are built to stand the strain. They have the unflinching ruggedness that defies terrific punishment. Rawhide toughness that resists cuts and punctures. And above all, amazing stamina that carries on and on—far beyond the commonly accepted standards of tire endurance.

Under engineering methods that brook no compromise, Dayton Stabilized Balloons are built to the limit of quality for insuring the limit of safety. Nothing is left to chance. Nothing is sacrificed to cut expense. Nothing is left undone to add the last degree of strength, sturdiness, and security.

Banish your dread of tire failure. Be free from the fear that holds you back when you'd like to enjoy all your car can do. Get the thrill of driving on Dayton Stabilized Balloons. Put them on your car today.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio

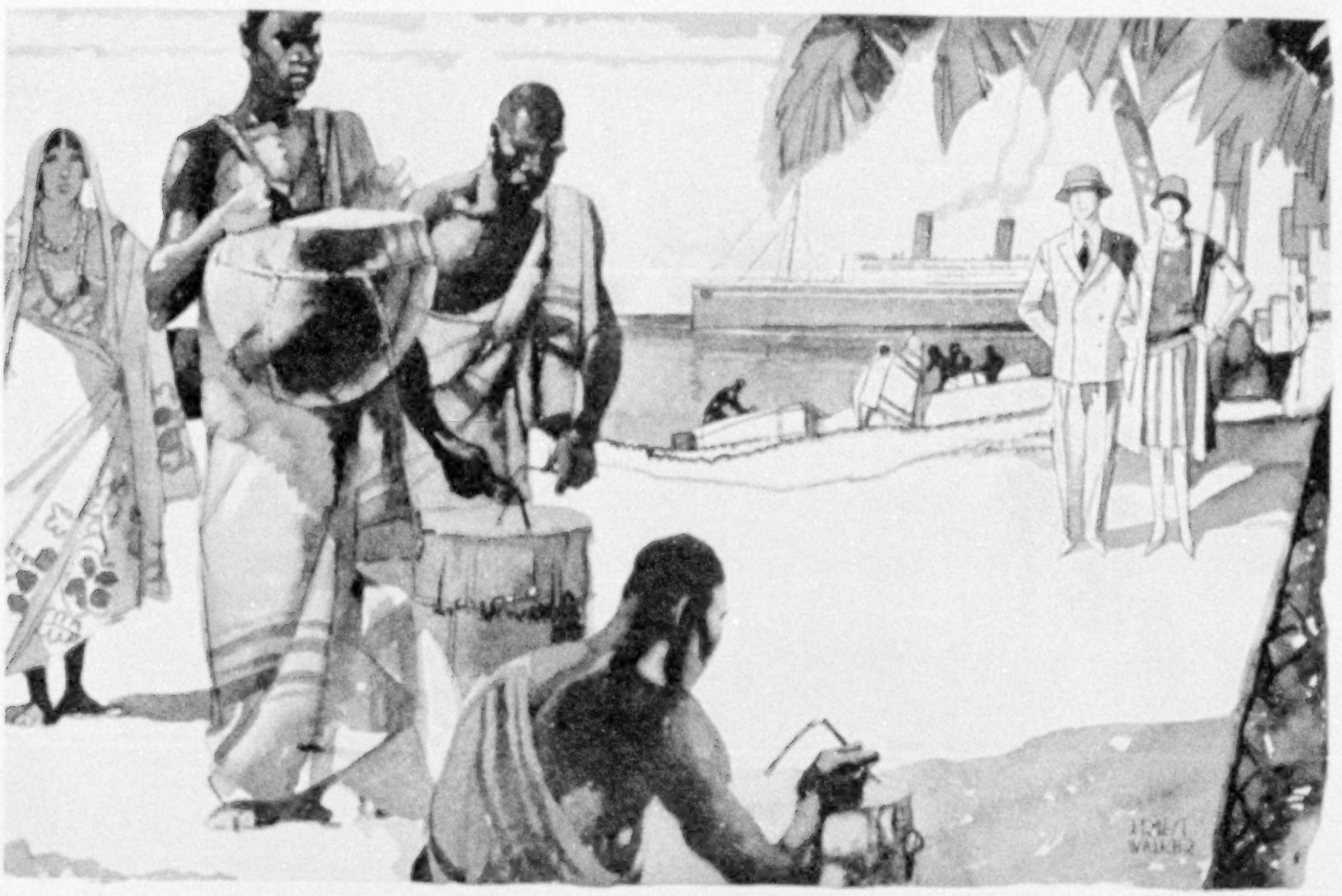
THOROBRED

Dayton STABILIZED BALLOONS

Makers of Dayton Thorobred Extra-Ply Cords for large diameter wheels, the pioneer low air pressure tires of America. Also makers of famous Dayton Maximaire Fan Belts, chosen by 85% of America's automobile and truck manufacturers as original equipment.

Dayton Thorobred Tubes—famous companions to Dayton Tires

South America · · Africa
CRUISE
PROM NEW YORK NEXT JANUARY 22ND



THE first act begins with New York in January. Quickly it shifts to sunshine, palms and quaintness . . . the West Indies. Another curtain . . . and you are revelling in the spectacular beauty of Rio de Janeiro, in the Parisian sparkle of Buenos Aires. Across the South Atlantic . . . South Africa. The panorama runs from 300-year-old Dutch boergs to modern Union cities—from Hottentot kraals to roaming herds of wildebeest. You descend into diamond mines, climb atop Victoria Falls. You see the last jungle.

On again . . . to mystic Arab settlements on the Portuguese East Coast. Ancient slave marts. Exotic bazaars. Thus, into the vast magic of Egypt and the Mediterranean. In Paris and London, you can write your own climax. Truly, the cruise of contrasts.

Through all this world-wandering, never the misfortune of poor meals or ill-chosen lodging . . . never the hardships of the frontier or the penalties of not-knowing. Your every day is eased by Canadian Pacific service; your every way is guided by Canadian Pacific staff. Its "one management, ship and shore" extends even to these unbeaten paths. Its Empress of France, clubbiest of great liners, carries you the whole route, the entire 104 days.

OTHER CRUISES, 1928-29
(*All from New York*)
Round the World 136 days.
Dec. 1, 1928. Empress of Australia.
Mediterranean. 72 days. Feb. 4, 1929.
Empress of Scotland.
West Indies. 16 days. Dec. 22, 1928;
29 days. Jan. 10 and Feb. 11, 1929.
Duchess of Atholl (new).

Cruise-wise people will reserve early. Booklets which detail what you see and how you live sent on request. Your own agent, or any Canadian Pacific District Office listed below.

• • • •

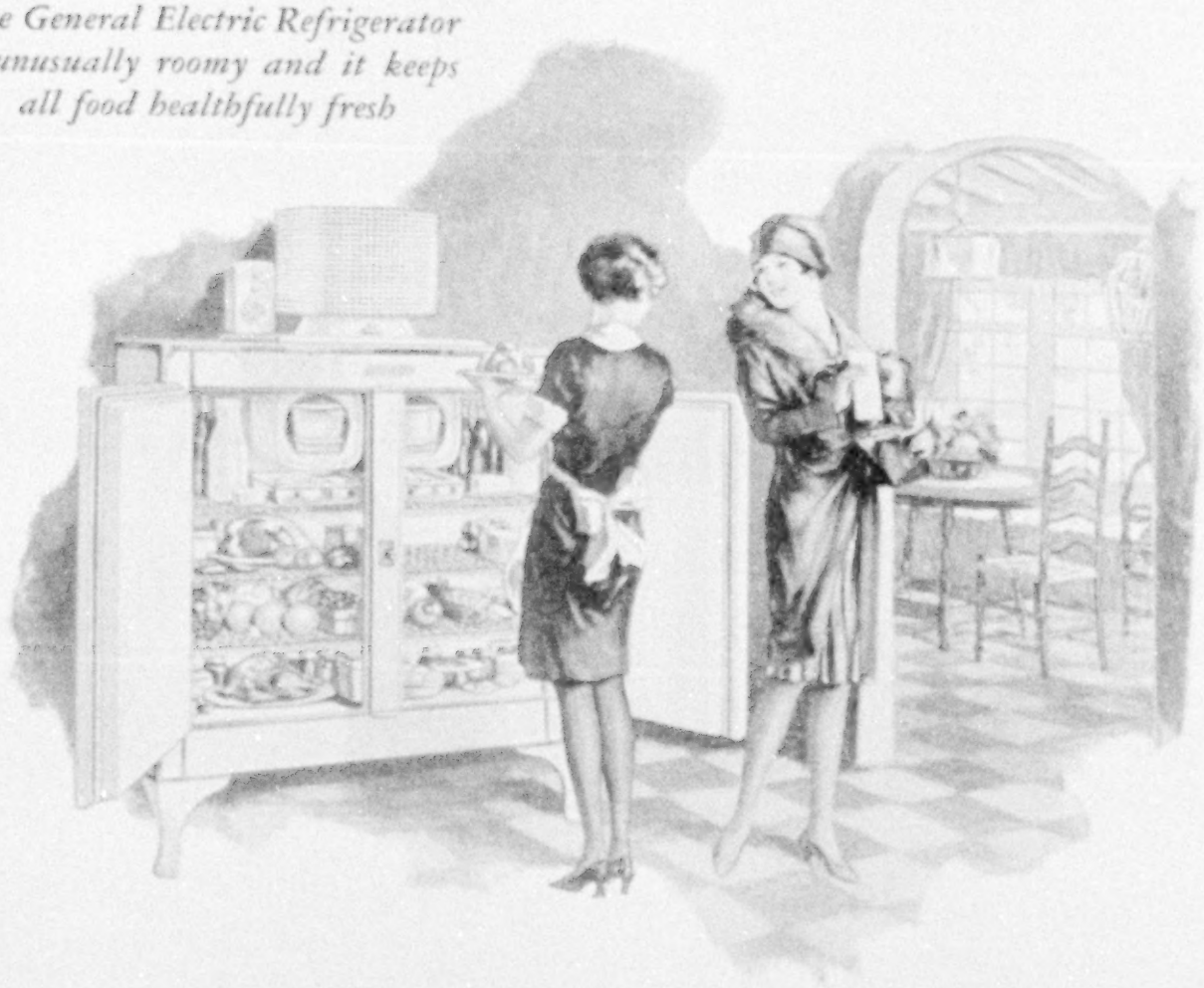
Atlanta, Boston, Buffalo, Chicago, Cincinnati, Cleveland, Detroit, Indianapolis, Kansas City, Los Angeles, Minneapolis, New York, Omaha, Philadelphia, Pittsburgh, Portland, San Francisco, St. Louis, Seattle, Tacoma, Washington. In Canada: Calgary, Montreal, Nelson, North Bay, Ottawa, Québec, St. John, Toronto, Vancouver, Winnipeg.

Canadian Pacific
World's Greatest Travel System

EMPRESS LINERS TO EUROPE AND ORIENT . . CRUISES . . TRANS-CANADA LIMITED . . BANFF . . CHATEAU FRONTENAC

Save time, energy and money —don't market every day

The General Electric Refrigerator is unusually roomy and it keeps all food healthfully fresh



IT'S such a relief not to have to go to market every day. Two or three times a week will do the job—with energy and time and money saved—if you have a General Electric Refrigerator.

For even the smallest model is so designed that it can hold a generous store of foods—several days' supply for the average family. And its temperature is just right to keep meats wholesome, milk sweet, salads crispy.

You will notice that the General Electric has no belts or fans or drain pipes. All its mechanism is hermetically sealed in one steel casing. You will be glad that it needs absolutely no oiling. And your bills for electricity will tell you the pleasant story that this perfect refrigeration is economical.

There are many models—at a wide range of prices. Get full information about them by writing us for booklet R-5, which is illustrated and completely descriptive.

GENERAL ELECTRIC
Refrigerator

ELECTRIC REFRIGERATION DEPARTMENT OF GENERAL ELECTRIC COMPANY HANNA BUILDING CLEVELAND, OHIO

In 16 years *we have not published a more dramatic story than this*

This is the story of a man who almost threw $10,000 into the waste basket because he did not have curiosity enough to open the pages of a little book. (Have you read one single book in the past month that increased your business knowledge or gave you a broader business outlook?)

The scene took place in a bank in one of the southern cities of California. The Vice-President, who had sent for a representative of the Alexander Hamilton Institute, said to him:

"I want your help in making a little private experiment among the junior officers of this bank. We have got to appoint a new cashier. I hate to bring a man in from the outside, and yet I am not at all sure that any one of our younger men is ready for the position. Here are the names of five of them. I want you to send a copy of 'Forging Ahead in Business' to each one, but without letting them suspect that I have had a hand in it. Then call and tell the story of the Institute's training to each one separately and let me know how he receives it.

"I enrolled for your Course in New York years ago," he explained. "It gave me my first real knowledge of the fundamental principles of business. It meant everything to me, and I have an idea that there is no better way to test a man's business judgment than to see how he reacts to the opportunity it offers."

The five copies of "Forging Ahead in Business" were mailed, and a few days later the representative of the Institute called. One of the five men was on a vacation; three had tossed the book into the waste basket. They "knew all about it already"; they were "not interested." The fifth had his copy on his desk unopened. To that fifth man the Institute representative said:

"You may not suspect it, but there is a check for $10,000 in that little book."

"Don't kid me," the other answered.

"I'm serious," was the reply. "I'll see you tomorrow."

The following morning the Institute man was called on the phone. "I think I found that $10,000 check last night," said the man at the bank. "If you're down this way today, drop in. I'd like to enrol."

A few months later the directors of the bank appointed him cashier: his upward progress had begun. One of the first friends whom he notified of his promotion was the Institute representative.

"It gives me a cold shudder," he said, "to remember that I was just on the point of throwing that little book into the waste basket—$10,000 and all."

Few men realize how eagerly business leaders are looking for the heads that stick up above the mass—for the men who by any sort of special training or ability have marked themselves for larger things.

For business nowadays develops the specialist—the man who knows his own department well, but who is so close to his job that he hasn't had time to learn the broad fundamental principles upon which *all* business is built.

Do you want more money? Ask yourself this: "Why should anyone pay me more next year than this year? Just for living? Just for avoiding costly blunders? I am devoting most of my waking time to business—what am I doing to make myself more expert at business?"

Here is the Institute's function in a nutshell: It first of all awakens your interest in business, stimulates your desire to know, makes business a fascinating game. And second, it puts you into personal contact with leaders, thrills you by their example, makes you powerful with their methods. Is it any wonder, then, that Institute men stand out above the crowd?

Thousands of men will read this page. Hundreds will turn aside, or cast it into the waste basket, as those three men in the California bank threw their copies of "Forging Ahead in Business" into the waste basket. But a few hundred will be stirred by that divine emotion—curiosity—which is the beginning of wisdom. They will send for "Forging Ahead"; they will read it, and like the fifth man, will find a fortune in its pages.

"I said to him, 'There is a check for $10,000 hidden in that book.'"

ALEXANDER HAMILTON INSTITUTE

565 Astor Place, New York City

Send me the new, revised edition of "Forging Ahead in Business," which I may keep without charge.

Signature .....

Please write plainly

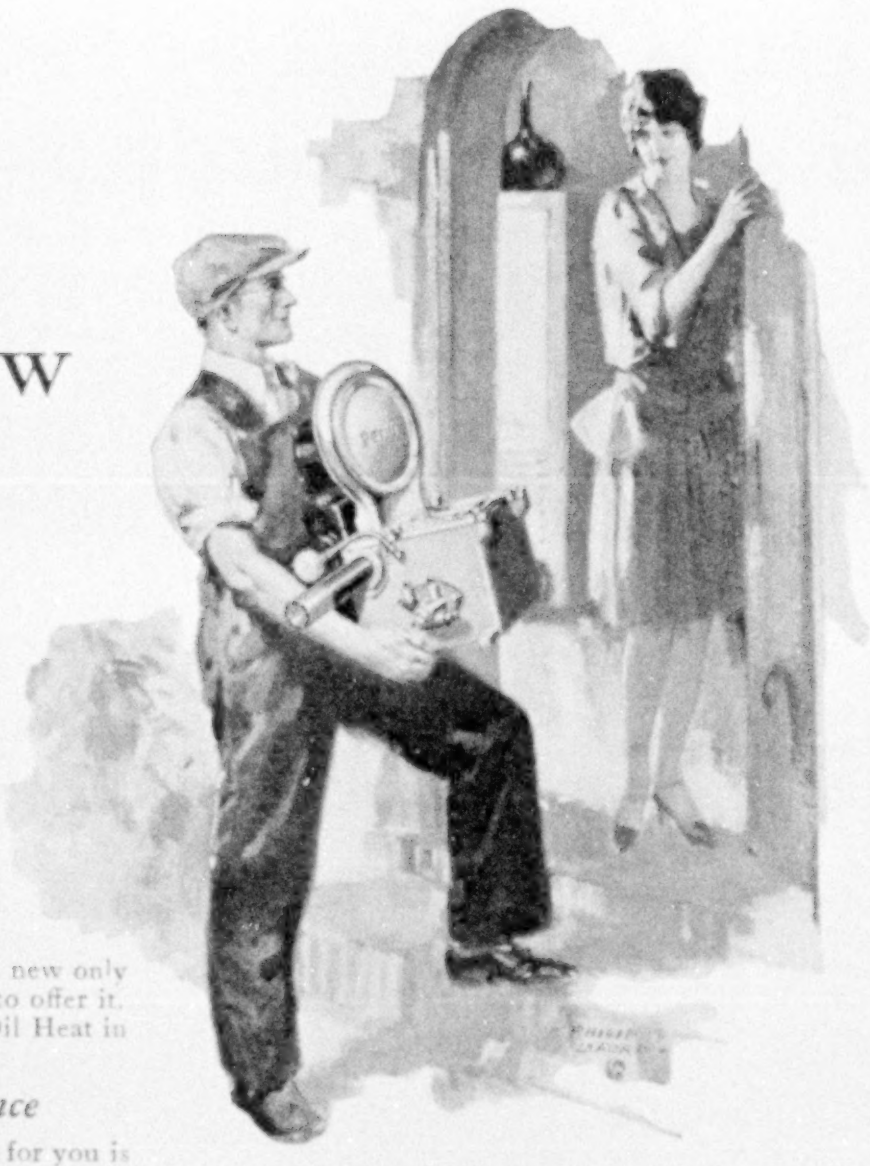
Business Address .....

Business Position .....

In Canada, address the Alexander Hamilton Institute, Limited, C. P. R. Building, Toronto

A Sweeping New Purchasing Plan

is brought about by PETRO'S *perfect five-year record*



HERE'S a new purchasing plan. It's new only because Petro is the first to be able to offer it. Now the actual comforts and joy of Petro Oil Heat in your own home help you decide!

A new, wonderful experience

The only way to appreciate what Petro does for you is to have it do it for you. You can shop a whole month among oil burner show rooms and never learn what one day's happiness with Petro means.

Petro Oil Heat cannot be compared with coal heat. What it brings to you is so new and wonderful that you forget that the hardships of coal heat ever existed! It's not the *relief* from coal heat—but the *thrill* of Petro Oil Heat that makes owners so enthusiastic. It's in never having to *think* about heat—not in *forgetting* the furnace. Not the novelty of having uniform temperature—but the modernness of never having anything else! The joy of having the house *stay* clean—not the freedom from *cleaning* house.

Sponsored by this
DIRECTORATE

ROBERT ADAMSON
T. COLEMAN DUPONT
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Petro's demonstration offer

Your local dealer offers you this opportunity to live with Petro Oil Heat for two weeks without any obligation on your part. Then you can decide how great are its advantages. If we did not know in advance what your decision would be, we would not be in the oil burner business.

This generous offer is not based on generosity. But on five years' perfect record, resulting from 25 years of research and success in oil heating.

History has proved that once a Petro goes in, *it never comes out!* And history is repeating itself every day with this new demonstration offer. This goal took 25 years to reach, but the results are worth it. Petro has achieved leadership that cannot be bought with money.

Making air do the work

You will understand this leadership when you see how Petro engineers have simplified oil heating by the use of air as a motive force! In Petro, air alone does the work of expensive gears, belts and shafts. Not only does it do it better and more quietly, but air never wears and costs nothing! The motor, fan and pump, directly connected, are the only three moving parts not operated by air, and *electricity operates these.* And with this simplicity, Petro uses the cheapest Fuel Oil available on the market today.

Decide today to avail yourself of this offer. The more quickly you act the more quickly you will realize what a privilege Petro is. Reasonable terms may be arranged so you can spread the payments over a period of a year. Your local Petro dealer will gladly make a survey of your heating plant and submit full details of this sweeping new purchasing plan. Phone him today or write us for a copy of "Guaranteed Oil Heat."

PETROLEUM HEAT & POWER CO.
511 Fifth Avenue · · NEW YORK, N. Y.

Makers of Oil Burners since 1903

PETRO
REG. U.S. PAT. OFF.

Domestic & Industrial Oil Burners

Outperforms every motor car in its price class-Easily!

No need to look far to explain the tremendous success of The Victory Six. It simply outperforms everything in its price class and everybody knows it.

Gets away faster and *goes* faster. Takes the hills faster. Weaves thru traffic faster. Travels faster and smoother over bad roads.

And accelerates faster throughout the entire speed range—5 to 25 miles per hour in 7¼ seconds! 10 to 45 miles in 13½ seconds!

The reason? . . . An engine of amazing flexibility, delivering *more power per pound of car weight than any car in its class!*

Made safe and practical in The Victory by the fine quality of Dodge materials, the high character of Dodge workmanship, and the many new and advanced features of Victory design.

And the smartest, roomiest and most luxurious fine car ever built at The Victory price.

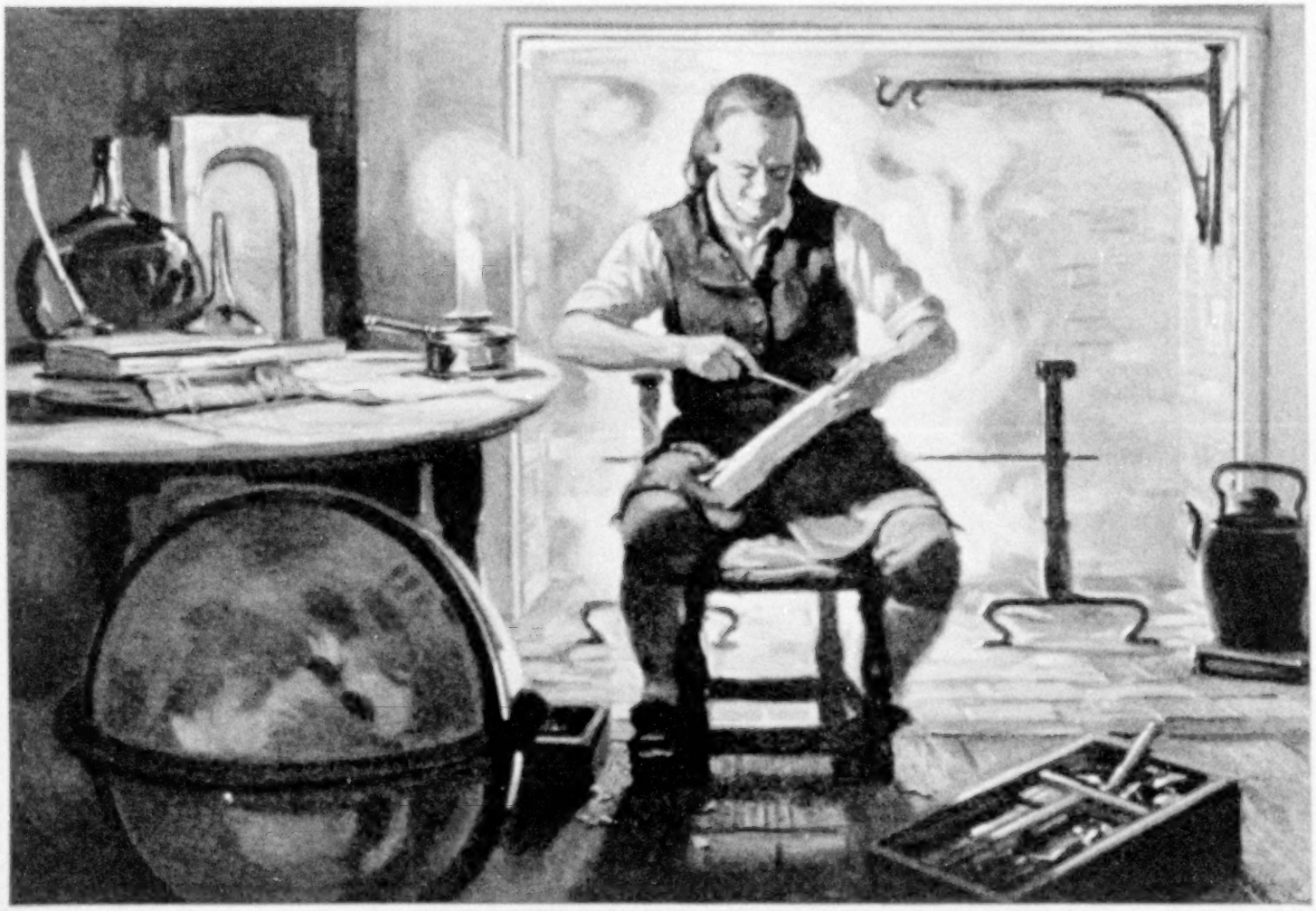
$1095

COUPE-BROUGHAM, F.O.B. DETROIT

The VICTORY SIX

BY DODGE BROTHERS

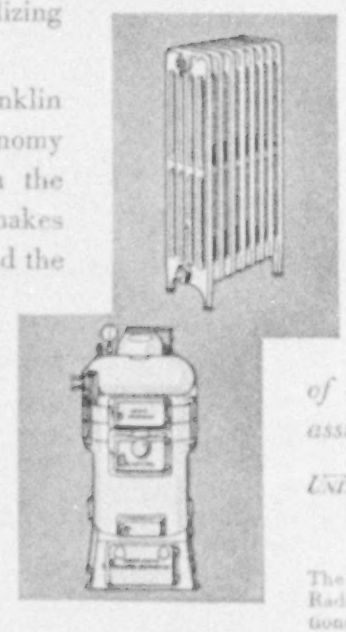
ALSO THE STANDARD SIX $875 TO $970 AND THE SENIOR SIX $1570 TO $1770



Ben Franklin's back was cold

TIRED of scorching his face and freezing his heels, and alternately warming his back and chilling his front, Benjamin Franklin in 1742 invented his Pennsylvania stove. A biographer calls it one of the first contrivances to give the American home the civilizing comfort marvelled at by the world.

But comfort was not all that Franklin aimed at. The difference in economy alone, he pointed out, "between the English farmer in America who makes great fires in open chimneys . . . and the German who burns his fuel in a stove . . . shall in a course of years enable the German to buy out the Englishman and take possession of his plantation."



Today's most modern development in the art of heating gives in highest degree exactly the benefits sought by Franklin. Comfort and economy, *certified*, are the outstanding advantages of *Capitol Guaranteed Heating.**

This is a binding warranty given with every Capitol boiler before it is installed, specifying the exact number of radiators which it will satisfactorily heat. Automatically, this guarantee selects the right size boiler for your home.

There is no guessing or wondering about whether it will be big enough. No worry about whether money will be needlessly spent on one too large. For annoying uncertainty is substituted scientific assurance of thrifty, healthy, economical warmth.

Consult a good contractor about the many superiorities of Capitol boilers; round, square, or smokeless. An interesting, illustrated book, "A Modern House Warming," is free. Write for it.

* * *

***Guaranteed Heating.** *Your contractor receives a written guarantee on the heating capacity of every Capitol boiler. No other heating equipment assures you satisfaction so definitely.*

UNITED STATES RADIATOR CORPORATION—DETROIT, MICHIGAN

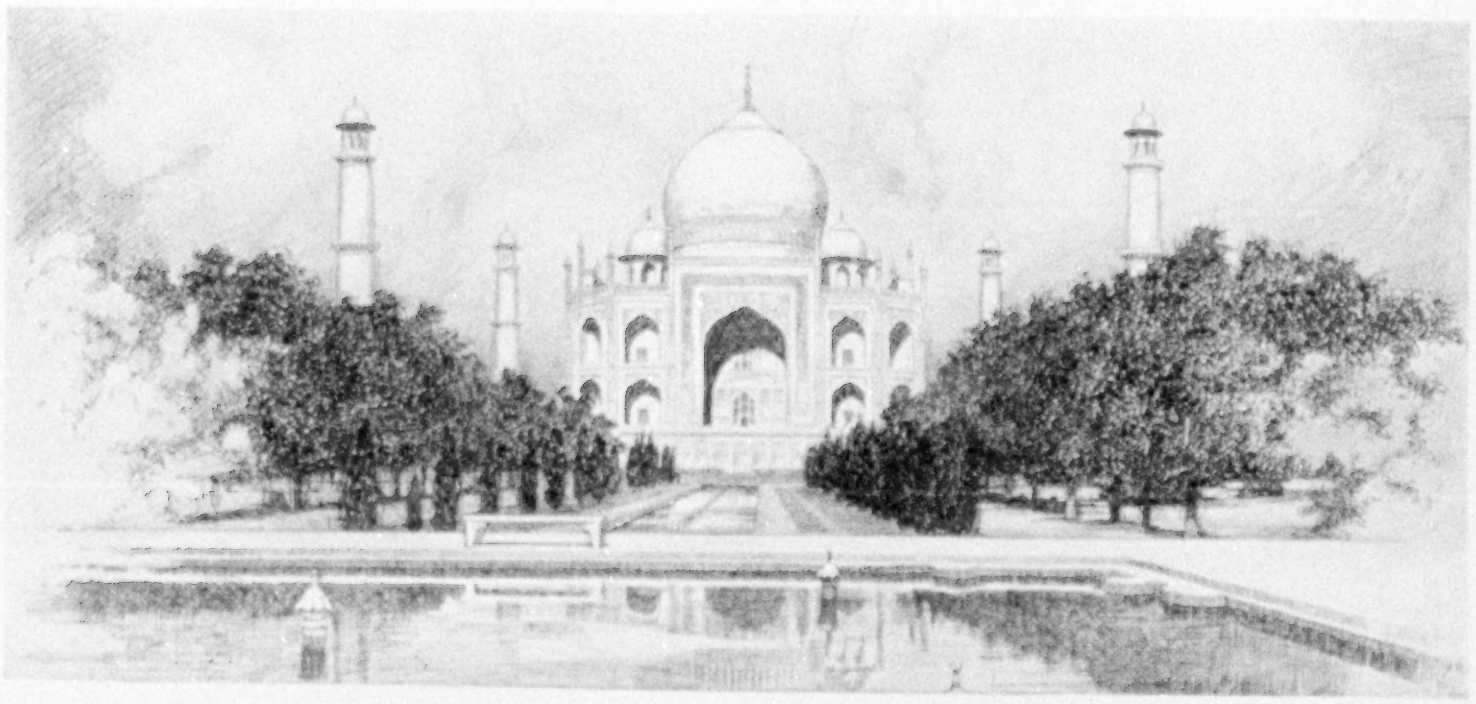
6 Factories and 32 Assembling Plants
For 38 years, builders of dependable heating equipment

The **Pacific Steel Boiler Corporation**, Division of the United States Radiator Corporation, builds welded steel heating boilers for large installations—business buildings, factories, schools, hotels, and large apartments.

Guaranteed Heating WITH

Capitol Boilers

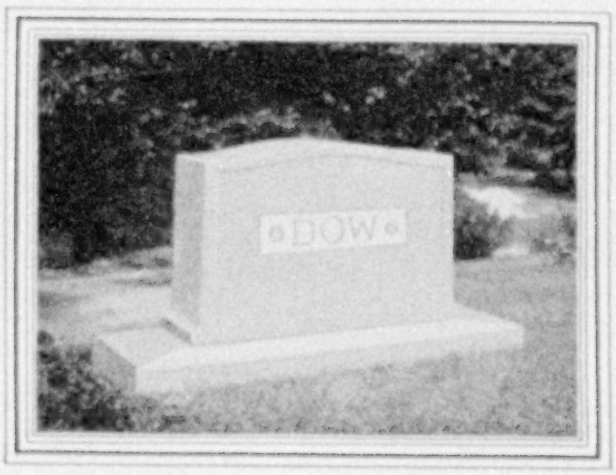
AND RADIATORS



Taj Mahal, near Agra, India

FOR nearly three hundred years the Taj Mahal has told to the world Shah Jehan's love for his favorite wife. In the perfection of its alabaster dome and the jeweled magnificence of its inlaid arabesques we find the supreme achievement of Oriental art. Though temples of matchless loveliness we may not build, beauty that defies the years is still within our reach. And this is true whether our memorial be a simple tablet or an elaborate mausoleum.

If we choose a permanently beautiful material, and if we erect a memorial of graceful line and proportion, we may be sure our message will be adequately told. Such a material is Rock of Ages granite—lovely in color, spotlessly pure, and impervious to heat, cold, or moisture.



Our Certificate of Perfection, when requested from any memorial dealer, assures you of our personal inspection through the various stages of completion and is your perpetual guarantee against defective workmanship and material.

Write for booklet "G"—"How to Choose a Memorial"

ROCK OF AGES

THE *DISTINCTIVE* BARRE GRANITE

ROCK OF AGES CORPORATION

BARRE VERMONT

Sunday *May 13*

Mother's Day

Among all the many words we say, what two express thoughts so closely linked as *Mother* and *Flowers?* Sunday is *her* day.

Say it with Flowers

THIS FELLOWSHIP EMBLEM *of the* SOCIETY *of* AMERICAN FLORISTS IS THE SIGN *of* A GOOD FLORIST

BELL & HOWELL
ANNOUNCE – Filmo 75
a beautiful "watch-thin" movie camera
at an attractive new price

FIVE YEARS ago Bell & Howell produced Filmo 70, the first successful *automatic* movie camera simplified for amateur use, and now standard among amateurs the world over.

Now, after three years of intensive development comes the new Filmo 75, affording the finest personal movies and costing *one-third less* than the Filmo 70!

With the new Filmo 75 the veriest novice can make home movies of theatre brilliance, depth and beauty on the first try.

It is "watch-thin" compared with other movie cameras. Beautifully embossed, wear-proof metallic finish. Weighs only three pounds—fits into the coat pocket. Winds like a watch, the permanently-attached key folding flat against side of camera. Retains the familiar spy-glass viewfinder concealed within the frame.

Held and operated easily in one hand. Regularly equipped with Taylor Hobson-Cooke F 3.5 anastigmat lens, quickly interchangeable with Telephotos and speed lenses for special use. Spy-glass viewfinder has automatic field area adjustments for use with all optional lenses.

Filmo 75 is built to the same high standards of quality as the Bell & Howell professional cameras costing up to $5,000 with which practically all of the world's finest theatre motion pictures are made. Among amateur cameras it is excelled only by the well known Filmo 70.

Both Filmo models use Eastman Safety Film (16 mm.) in the yellow box, obtained at practically all stores handling cameras and supplies. First cost covers developing and return postpaid to you. Then you are ready for movies *in your own home*, shown with the Filmo Projector.

See the new Filmo 75 in beautiful colors at your dealer's. Price includes genuine Scotch-grained leather, plush-lined carrying case. Mail coupon now for full descriptive information.

BELL & HOWELL CO.
1817 Larchmont Ave., Chicago, Ill.
Please mail full descriptive information on your new Filmo 75 and send name of nearest store where I may examine and try it.
Name .....
Address .....
City ..... *State* .....

BELL & HOWELL

Filmo

"What you see you get"

FILMO 70

The most flexible and highly perfected movie camera made at any price for amateur use. Adaptable to all conditions of light, speed and distance. Optional mechanisms for making s-l-o-w movies. Described in free booklet, "Home Movies of the Better Kind." Write

ARISTOCRATS OF THE SEA

With a background of fine traditions and nautical lineage, and a foreground of modern standards, White Star, Red Star and Atlantic Transport ships traverse the ocean lanes, the aristocrats of the sea. . . . Chosen by the fashionables because they are correct—by confirmed travelers for their inimitable service and comfort—by students, artists and economical vacationists because of their delightful TOURIST Third Cabin accommodations.

Ships for every purse and plan.

No. 1 Broadway, New York. Offices and agents everywhere.

WHITE STAR LINE

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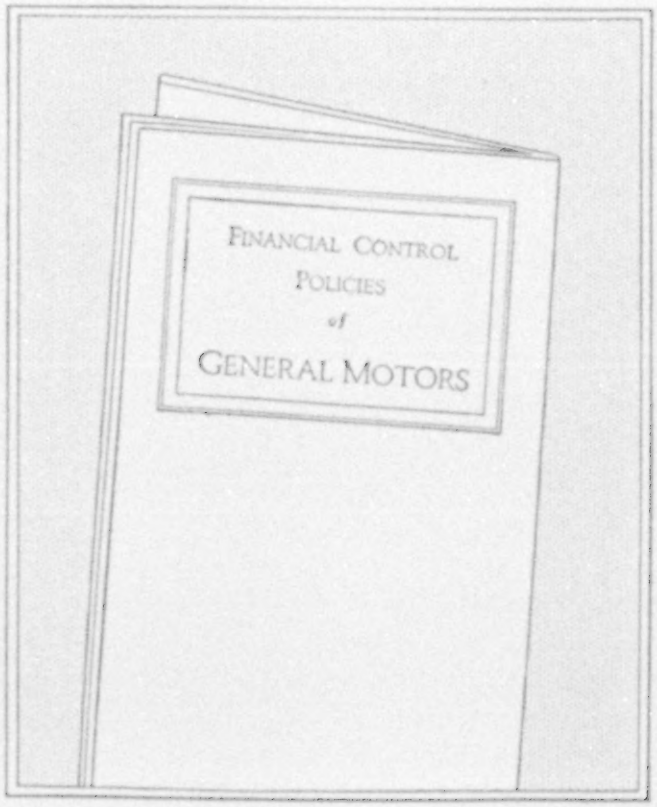
INTERNATIONAL MERCANTILE MARINE COMPANY

FINANCIAL CONTROL POLICIES *of* GENERAL MOTORS

BY gradual evolution based upon its experience, General Motors has crystallized its policies in regard to the pricing of its motor cars, the control of its inventories, and the regulation of its production with a view toward stabilizing its own business. It is believed confidently that this method of scientific analysis and control will not only be of constructive benefit to General Motors and its thousands of sources of supplies, but that it also will be an important contribution by General Motors to the stabilization of American business.

In addition to its Annual Report and Quarterly Statement of Earnings, General Motors issues special booklets from time to time for the information of its stockholders, employees, dealers, and the public generally. Many of the principles and policies outlined in the booklets apply to every other business as much as they do to that of General Motors.



A copy of this booklet, FINANCIAL CONTROL POLICIES OF GENERAL MOTORS, together with copies of other booklets issued to the stockholders, will be mailed if a request is directed to Department M-3, General Motors Corporation, Broadway at 57th Street, New York City.

GENERAL MOTORS

"A car for every purse and purpose"

CHEVROLET · PONTIAC · OLDSMOBILE · OAKLAND
BUICK · LaSALLE · CADILLAC · *All with Body by Fisher*
GENERAL MOTORS TRUCKS · YELLOW CABS and COACHES

FRIGIDAIRE—The Electric Refrigerator *DELCO-LIGHT Electric Plants*

GENERAL MOTORS

BODY BY FISHER

THE closed body you see on the lowest priced General Motors car is the equal in every fundamental factor to the body of the finest, costliest car ever built. For the body of that lowest priced car—like the closed bodies of *all* General Motors cars—is a *Body by Fisher*—and Fisher employs a *single standard of craftsmanship*. In the building of all Fisher Bodies only that construction and engineering recognized as the best are employed. Fisher always serves quality and value first.

BODY BY FISHER

CADILLAC

LA SALLE , BUICK

OAKLAND , OLDSMOBILE

PONTIAC , , , CHEVROLET

FRIGIDAIRE

THE CHOICE OF THE MAJORITY

Each day an increasing portion of the food of the world is protected in homes and stores by Frigidaire. More and more people recognize that a constant, low refrigerator temperature is a vital safeguard to health. And Frigidaire's dependability makes it the choice of an ever-growing majority of buyers. Learn how a few dollars down and easy monthly payments put any model in your home.

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FRIGIDAIRE

PRODUCT OF GENERAL MOTORS

What do *you* know about *the* Forgotten Peoples *of* Pu-yé *and* Ci-cu-yé ~ of Pueblo Bonito *and* Penasco Blanco ~ of Aztec *and* Mesa Verde ?

WHILE WESTERN EUROPE was yet a wilderness prehistoric American peoples wove fine cotton cloth, built great irrigation systems, reared many-storied cities. Mystifying ruins from that time-dimmed past dot the magnificent mesa and canyon country of New Mexico and Arizona. Here in America, among primitive Mexican villages and Indians of many tribes, is an undreamed-of American history, romance and antiquity.

Harveycar Motor Cruises now open up this little known territory to the discriminating traveler. Specially equipped Packard Eight Cruisers, with Harvey trained driver-mechanicians. A courier-hostess, trained under the School of American Research, accompanies each party, limited to four persons in one car. Nine Harvey hotels furnish headquarters, while farther afield comfort is assured.

Cruises, in length from several days to a month or longer, conveniently start out from *La Fonda Hotel* in Old Santa Fé. Cars, however, will meet parties at any point on the Santa Fe transcontinental lines between Trinidad, Colorado, and Grand Canyon, Arizona.

Schedules often may be arranged to include colorful and unusual Indian ceremonies, in the heart of the famous **Indian-detour** country.

Harveycar Cruises are operated throughout the year and offer wonderful vacation possibilities for family parties. Rates $25.00 per day per person for parties of three or more, include every expense. Itineraries and complete information gladly furnished. *Mail coupon below.*

Santa Fe
Harveycars

Harveycar Motor Cruises—Santa Fé, New Mexico
Check Those Wanted

Please send me information regarding Harveycar Cruise starting from Old Santa Fé, or _____, to include: Taos and Red River Loop ☐ Rio Grande Pueblos ☐ Acoma and Enchanted Mesa ☐ Pueblo Bonito Ruins ☐ Aztec Ruins ☐ Mesa Verde National Park ☐ Zuni ☐ Canyon de Chelly ☐ Hopi Villages ☐ Petrified Forests ☐ Rainbow Bridge ☐ Grand Canyon National Park ☐ Navajo Country ☐ Carlsbad Caverns ☐ Indian-detour ☐

1015-A **Harveycar Motor Cruises**
Under Santa Fe–Harvey Co. Management
Santa Fe', New Mexico

The new Marquis-Strap. Unusually attractive 14k gold-filled case, curved to the arc of the wrist, fitted with 17-jeweled movement of very high quality. $50.00

The Marquis-Autocrat. Thin model, 17-jeweled movement in 14k gold-filled case with embossed raised figure dial. A highly satisfactory and faithful timepiece. $50.00

Extremely small and smart rectangular wrist watch with fine 17-jeweled movement in 18k solid white gold case, hand engraved or inlaid enamel. $75.00

There's a Golden Rule of Giving

Suppose it were your own graduation that's so near. Isn't there some one gift you might prize above all others—some gift peculiarly appropriate, useful, lasting? Isn't that what you should choose to give?

Such a gift, surely, is a good watch. And here in America are made watches which maintain standards of accuracy and service that are unsurpassed in the world. One of these is Illinois.

Illinois is one of the oldest and one of the greatest American watches. For more than 50 years Illinois Watches have been made with such ideals of precision and artistry that many which have been carried twenty, thirty, even forty years are still giving satisfactory service.

Give the kind of watch you would want for yourself. And when you get it, just ask your jeweler to show you an Illinois. He has known them ever since he has been in business, and he knows what a good watch an Illinois is.

The ILLINOIS WATCH

Established 1870

SPRINGFIELD, ILL.

MAKERS OF THE FAMOUS ILLINOIS RAILROAD WATCHES

1000 MEN TOLD US

What men wanted in shaving cream. Now, before you buy, try what we've made for you —at our expense—for 10 days

GENTLEMEN:

When we decided to create a shaving cream, we asked 1000 men what they sought in shaving comfort and efficiency. Then we set out to meet their requirements.

They told us four things. We gave them five. Now we ask the courtesy of a test—based solely on merit—to prove *to yourself* the shaving delights we have discovered for you.

These 5 important factors

1. Multiplies itself in lather 250 times.
2. Softens the beard in one minute.
3. Maintains its creamy fullness for 10 minutes on the face.
4. Strong bubbles hold the hairs erect for cutting.
5. Fine after-effects due to palm and olive oil content.

Now make the trial, please

No doubt your present shaving preparation suits you, yet there may be a better way. We've tried to find one for you, and will thank you to give it a test. Just send the coupon now.

THE PALMOLIVE-PEET COMPANY
CHICAGO, ILL.

3972

10 SHAVES FREE

and a can of Palmolive After Shaving Talc

Simply insert your name and address and mail to Dept. B-1491, Palmolive, 3702 Iron St., Chicago, Ill.

Residents of Wisconsin should address Palmolive, Milwaukee, Wis.

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(Please print your name and address)

Will you travel to EUROPE *twice* in order to enjoy it *once?*

WHAT will your trip to Europe be like? Will you *trust to luck* to overcome the difficulties of foreign languages, customs and the intricacies of passports, timetables, etc? Will you start unprepared and learn from experience just what to do and what not to do —where to go and the places to avoid?

Or will you—without additional expense—make sure *beforehand* that your trip to Europe will be a most enjoyable vacation? Through the American Express plan of Escorted Tours, your entire trip is arranged in advance by experts who know Europe like a book. You travel abroad under the personal guidance of a tour-manager who *knows*, from years of experience, just what to do, just how to take care of everything.

Escorted Tours from $429 to $1950

Irrespective of the amount you plan to spend, American Express Escorted Tours will enable you to travel abroad more comfortably and enjoyably. Write today for any of the booklets listed below. *Everything* for the trip is carefully described so that you may have a very clear idea of what you are going to see, even before you start.

AMERICAN EXPRESS

Travel Department

F. C. Tour Dept. B
65 BROADWAY, NEW YORK

I would like to receive booklets giving details of the tours checked—

- ☐ Limited Expense Tours—Summer Months, $429 up.
- ☐ Special Summer Tours—$740 to $1,070
- ☐ Quality Tours—$1,370 to $1,950

Name .....

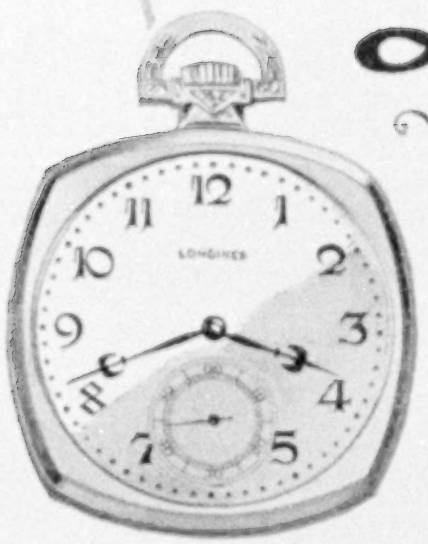
Address .....

American Express Travelers Cheques Always Protect Your Funds

the most honored watch for the most honored Pilot

Longines

A. WITTNAUER CO. WATCHES
EST. 1866



No. 109. Gold filled, *15 Jewels* $40.

Faced with the problem of presenting to Colonel Lindbergh an adequate symbol of their admiration for his historic achievement, the people of Guatemala found what they sought in the Longines watch, a beautiful gift engraved with the coat of arms of Guatemala. A Longines watch was also presented to Colonel Lindbergh by Mayor Walker of New York City.

Longines chronometers were used exclusively by Chamberlin, De Pinedo, Franco, Locatelli, Mittelholzer, Costes and Lebrix.

Since 1878 Longines watches have received highest awards, whenever shown, at all Observatory contests and International Exhibitions. Awards to Longines—The Most Honored Watch in the World—number 9 Grand Prizes and 26 Medals.

Write for illustrated booklet of Longines watches and address of nearest authorized agent.

No. 205. 18 Kt., platinum top, 36 diamonds . . . . . $450.
All platinum . . . . . $590.

No. 146. Gold filled, *15 Jewels* . $60.
14 Kt. solid gold, *15 Jewels* $120.

No. 132. Gold filled, *hand engraved* $74.
14 Kt. solid gold . . . $114.

A. WITTNAUER CO.

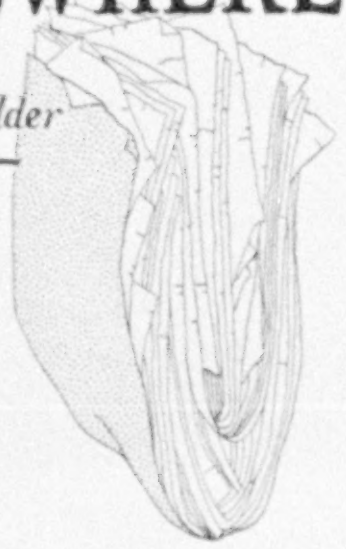
Established 1866

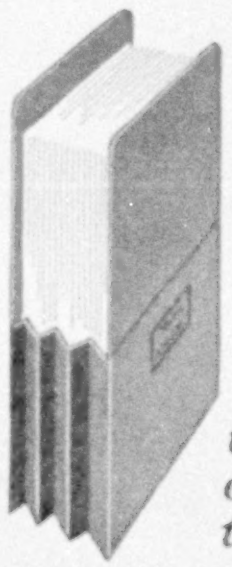
402 FIFTH AVENUE, NEW YORK

CHICAGO MONTREAL GENEVA

SOMEWHERE

in your files there is a folder like this —





that can be made to look like this

EVERY filing system has its crowded, overtaxed folders, which, altho never intended to hold more than a few dozen letters, are carrying several hundred.

These folders, with their hidden indexes and high and low positions in the files, not only disrupt and impair the efficiency of the entire filing system, but, since they carry the correspondence of the most active accounts, are the most frequent source of trouble because of misfiled or lost letters.

Vertex VERTICAL-EXPANDING **File Pockets**

are designed to hold efficiently three, thirty, or three hundred letters. They always stand upright in the filing cabinet, with their index tabs in plain view, ready for quick filing and instant reference.

We urge you to try a "Vertex" Pocket in the place of that folder in your files that carries the most correspondence.

The coupon below will bring you a free sample for this purpose. There is no obligation attached. Send for it today.

CUT HERE

Please send me for trial in my files a free sample of Bushnell's Paperoid "VERTEX" File Pocket, as described in May National Geographic Magazine.

Name of firm .....

Address .....

Name and Position of Person Inquiring .....

.....

Letter Size or Legal Size Desired? .....

To ALVAH BUSHNELL CO., Dept. G
13th and Wood Sts. Philadelphia, Pa.

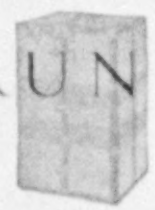
IT sounds epigrammatic to say that only the rich can afford poor luggage, but it is a fact. Only the rich can afford to take a chance with their clothes.

An attractive descriptive booklet, "Your Home Away From Home," will be sent you on request to 428 High Street, Oshkosh, Wisconsin.

THE OSHKOSH TRUNK COMPANY
Oshkosh, Wisconsin
and 8 East 34th Street, New York City

OSHKOSH

TRUNKS



These shingles are not expensive

First cost of Johns-Manville Asbestos Shingles is the last. You will never have to buy another roof. Johns-Manville Asbestos Shingles are *permanent*.

Increase the value of your home

by using Johns-Manville Asbestos Shingles

When you re-roof with Johns-Manville Rigid Asbestos Shingles, you re-roof for the last time. And when you do this you add to the value of your home. The pleasant, harmonious color, the thick, substantial appearance of these everlasting, fireproof shingles dresses up any house, large or small, and gives it the smart appearance demanded by modern taste.

Thus, when you end forever the need for another roof, you add definitely to the value of your home. This is of particular importance in the case of homes of modest proportions. Too often small houses, otherwise attractive, have flimsy appearing roofs, dull and commonplace in color, and never free from the constant menace of fire.

Applied Directly Over Your Present Roof

Johns-Manville Asbestos Shingles are laid over your old roofs without the expense or annoyance of ripping off the old material. It is no longer necessary to buy a new roof every few years. Nor is it necessary to have a commonplace roof whether your home is new or one in which you have lived for years.

When you build a new home, protect it with a roof of fireproof Johns-Manville Asbestos Shingles. You will never have to put on another roof, nor will your grandchildren. Color pages in Collier's, Liberty and many monthly publications, and our free booklet, show the wide color range of our shingles.

It is easy to buy these handsome shingles. Any roofer, contractor, lumber or building material dealer can supply them. If he has none in stock he is near a Johns-Manville Authorized Distributor from whom he can obtain them. It will pay you to insist on what you want, to be certain that you are going to have the choice of colors and permanence of Johns-Manville Asbestos Shingles, and their safe protection from fire brands.

Be sure to get from your roofer our Registration Certificate which goes with every genuine Johns-Manville Asbestos Shingle roof. Your roof will then be recorded, together with the name of the roofer and the dealer who supplied the shingles. This certificate insures you the protection of our full guarantee.

Johns-Manville Asbestos for Your Car, Too

Brake lining is the most important thing in your car. Unless it is in good condition you cannot drive a hundred yards safely.

To resist the burning wear of brake drums, Johns-Manville devised the first asbestos brake lining. Use it and be safe.

Further Economy in the Hexagonal Shape

Any Johns-Manville Asbestos Shingle roof is a good investment. Because of its permanency it means an actual saving of money. And its beautiful color makes your home more attractive, more valuable. The Hexagonal shape, patterned after the roofing tiles of quaint French cottages is particularly attractive. Because of the shape and the ease of applying, roofs of Hexagonal Shingles are lowest in price. Yet they give you the same fireproof Asbestos that is in all Johns-Manville Rigid Shingles.

Johns-Manville

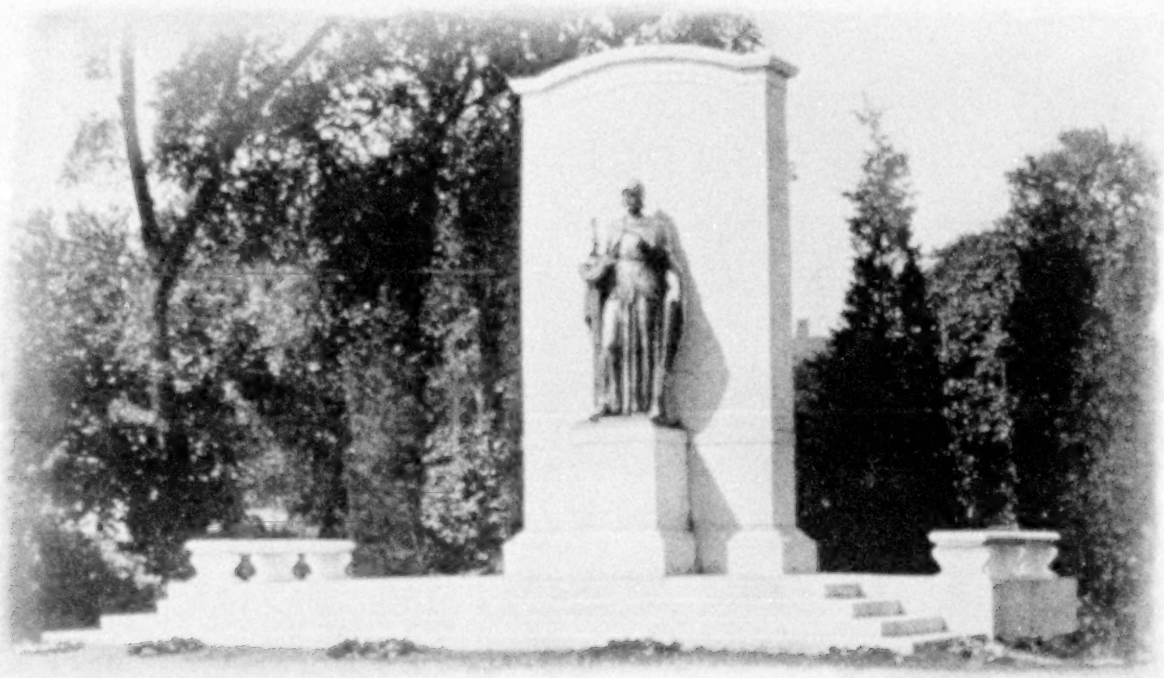
ASBESTOS MINERS AND MANUFACTURERS

JOHNS-MANVILLE CORPORATION
New York, Chicago, Cleveland, San Francisco
For Canada: Canadian Johns-Manville Co., Ltd., Toronto
Send me your free booklet about Asbestos Shingles.

Name.....

Address..... R-41-5

WORLD WAR MEMORIAL, New Rochelle, New York



THE pedestal and setting for the symbolic bronze figure are of imperishable Milford Pink Granite. Truly a worthy material, admirably suited, indeed, for perpetuating noble conceptions of art. A beautiful Memorial, public or private, is deserving of expression in one of our everlasting Granites.

May we help you by sending a copy of the book, "Modern Memorial Art."

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STONY CREEK, CONN.

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Exclusive Producers:
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an unsafe investment? Safety always should be the first consideration of every investor. S. W. STRAUS & CO.'S current offerings include a wide variety of sound securities—especially first mortgage bonds on high grade properties, yielding 5 to about 5.75%. Write for

BOOKLET E-1808

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565 Fifth Avenue
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Michigan Avenue
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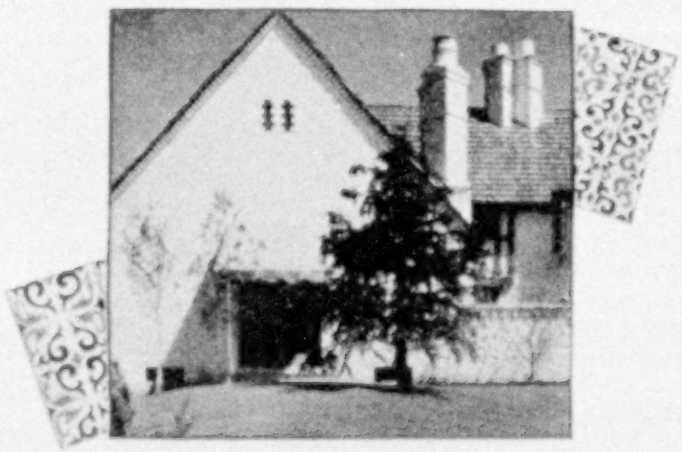

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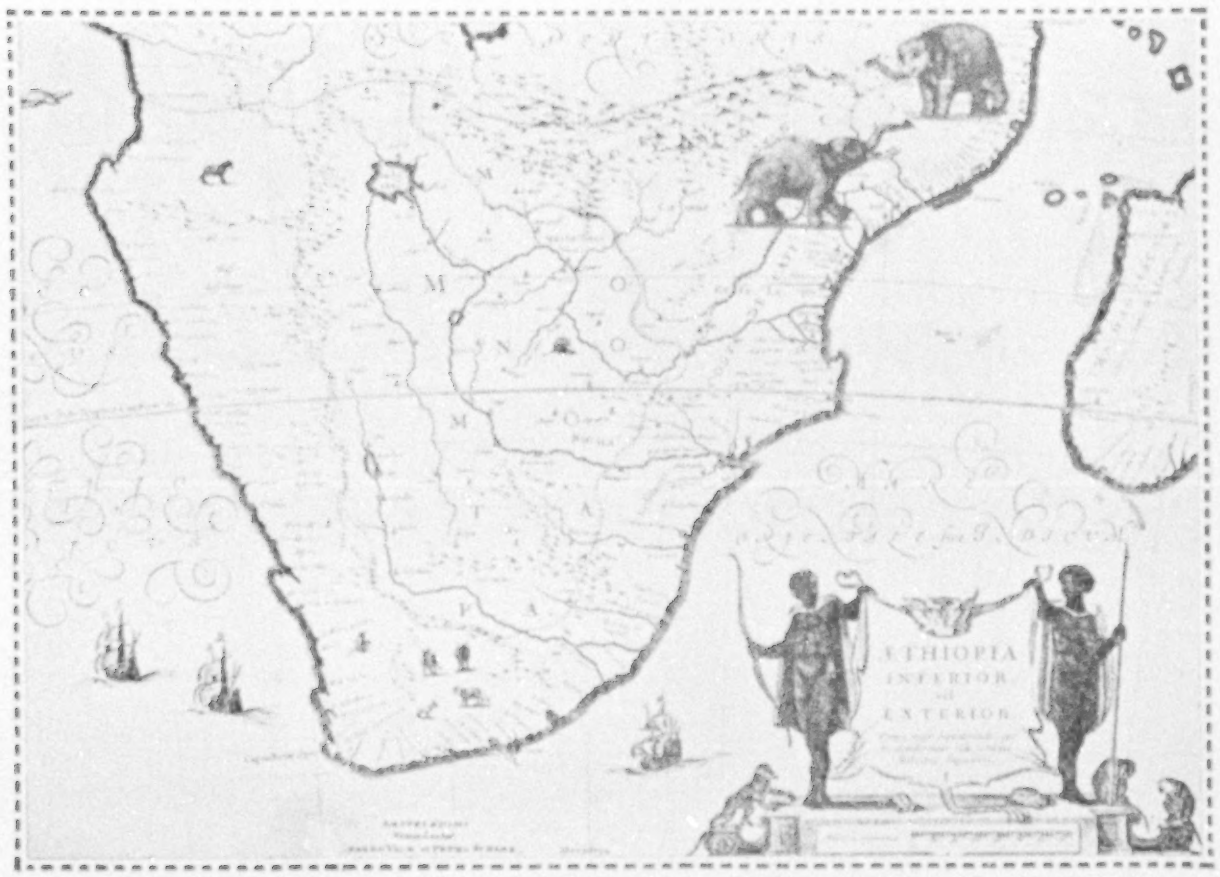

Elephants · · in place of towns

Why have they disappeared from our maps—the quaint decorations to which the maps of a few centuries ago owe so much of their charm?

True, we no longer believe that sea serpents, dragons, cherubim, mermaids and zephyrs haunt the corners of the seas. But why not still the ships and the less fabulous fauna?

The simple answer is that they are no longer necessary. How they ever came to be put on maps is sufficiently explained in these lines by Dean Swift:

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Place elephants for want of towns."

There are fewer gaps to be filled, these days! And it is this very fact that makes our modern maps even more fascinating than maps ever were before.

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FOR years there has been a need for a new system of shorthand—modern, scientific, more *rapid* than conventional sign systems and more accurate—a system that could be learned *easily* and *quickly*.

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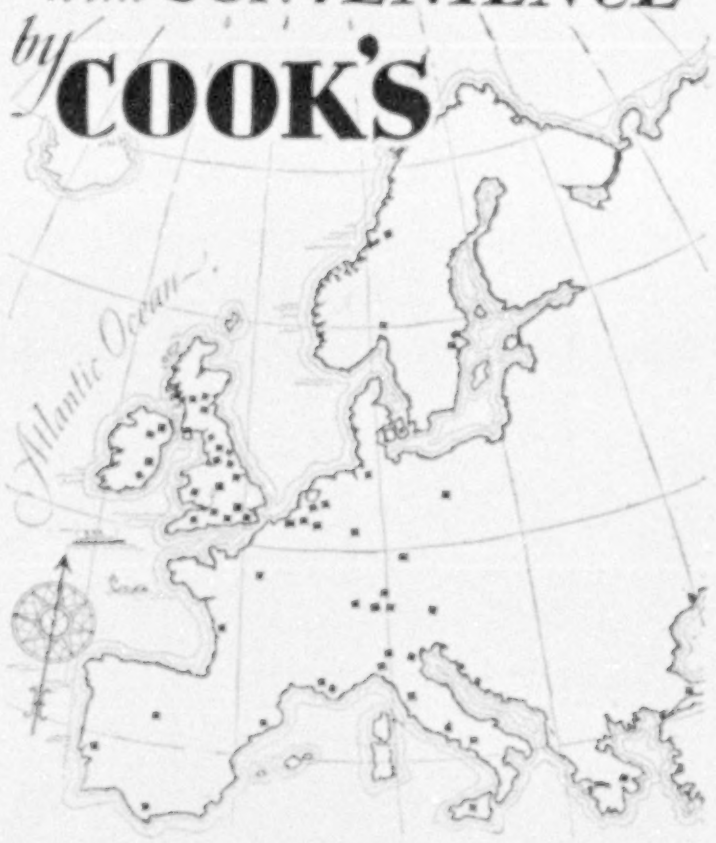

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Such white teeth should never cause worry YET...

LURKING behind sparkling eyes, youthful energy and health are grim foes waiting to swoop down on the unwary. Only care can protect you.

Keep your teeth clean and white; but do not ignore the gums. For it is the delicate gum tissue that the dread disease of neglect (Pyorrhea) attacks.

Thinking they are safe when teeth are gleaming white, 4 persons out of 5 after forty, and thousands younger (figures of famous dental clinics show an even higher percentage) surrender precious health to Pyorrhea. What a needless sacrifice!

As your dentist will doubtless tell you, a little care will safeguard you against infection which attacks the gums. See him at least once every six months. Have him examine teeth and gums thoroughly. And start the regular morning and night use of Forhan's for the Gums.

Without the use of harsh abrasives this dentifrice cleans teeth and restores their natural whiteness. Also it protects against acids which cause decay.

But of greater importance to your health is its tendency to protect the gums. If used regularly and in time, it helps to firm the gums and keep the delicate tissue sound and healthy.

Dentists tell us that Pyorrhea seldom attacks healthy gums.

Forhan's is the formula of R. J. Forhan, D.D.S., and it is compounded with Forhan's Pyorrhea Astringent used by dentists everywhere in the treatment of gum infections.

Do not wait for the signs of approaching danger, for gums to bleed and recede, for teeth to loosen. Preventive measures are far easier than cure. Today, begin brushing teeth and gums with Forhan's morning and night. And teach your children this good habit which will help to protect their precious health in years to come. Get Forhan's from your druggist—in tubes, 35c and 60c.

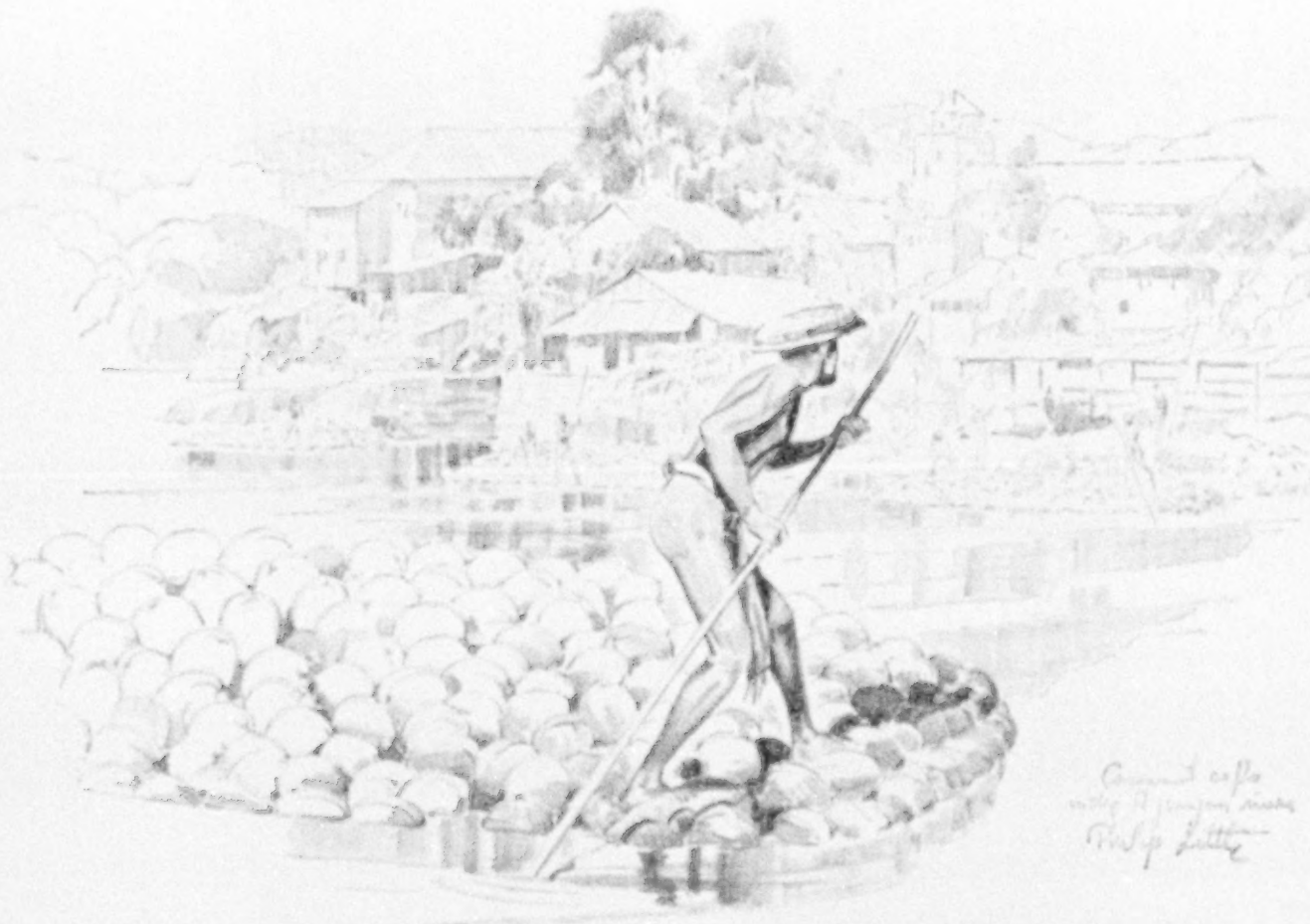
Forhan Company, New York

Make This 10 Day Test

Lazy, lethargic gums invite disease. And the only way to keep them firm, sound and healthy is to massage them daily just as a woman massages her face to keep it glowing with youth and free from the signs of age. Forhan's for the Gums is designed for gum massaging. Make this 10 day test. Morning and night, before brushing your teeth with Forhan's, exercise your gums, closely following the directions in the booklet that comes with each tube . . . See how much better they look and feel!

Forhan's *for the gums*

YOUR TEETH ARE ONLY AS HEALTHY AS YOUR GUMS



Go west to Europe

Through the ancient east are glorious adventures that multiply beyond compare the pleasures of an European trip. Go westward this time.

A glimpse of Honolulu, if you choose, days or weeks through Japan, then Shanghai and Hong Kong with scores of enchanting trips to the interior of China available, Manila, Malaya, Ceylon, India, Egypt, and then into Europe through Naples, Genoa and Marseilles.

You may start your trip from New York or Boston, visiting Havana and Panama on your way to California.

Or come overland to Los Angeles, San Francisco or Seattle for your embarkation. See the great Pacific Coast.

After your trip through Europe you may return from Marseilles to New York and Boston aboard these same palatial Round the World Liners.

You will have made the world circuit in a surprisingly short time and at a cost that is far less than you have thought it could be.

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Low summer fares in effect May 15. For example, round-trip from Chicago to San Francisco

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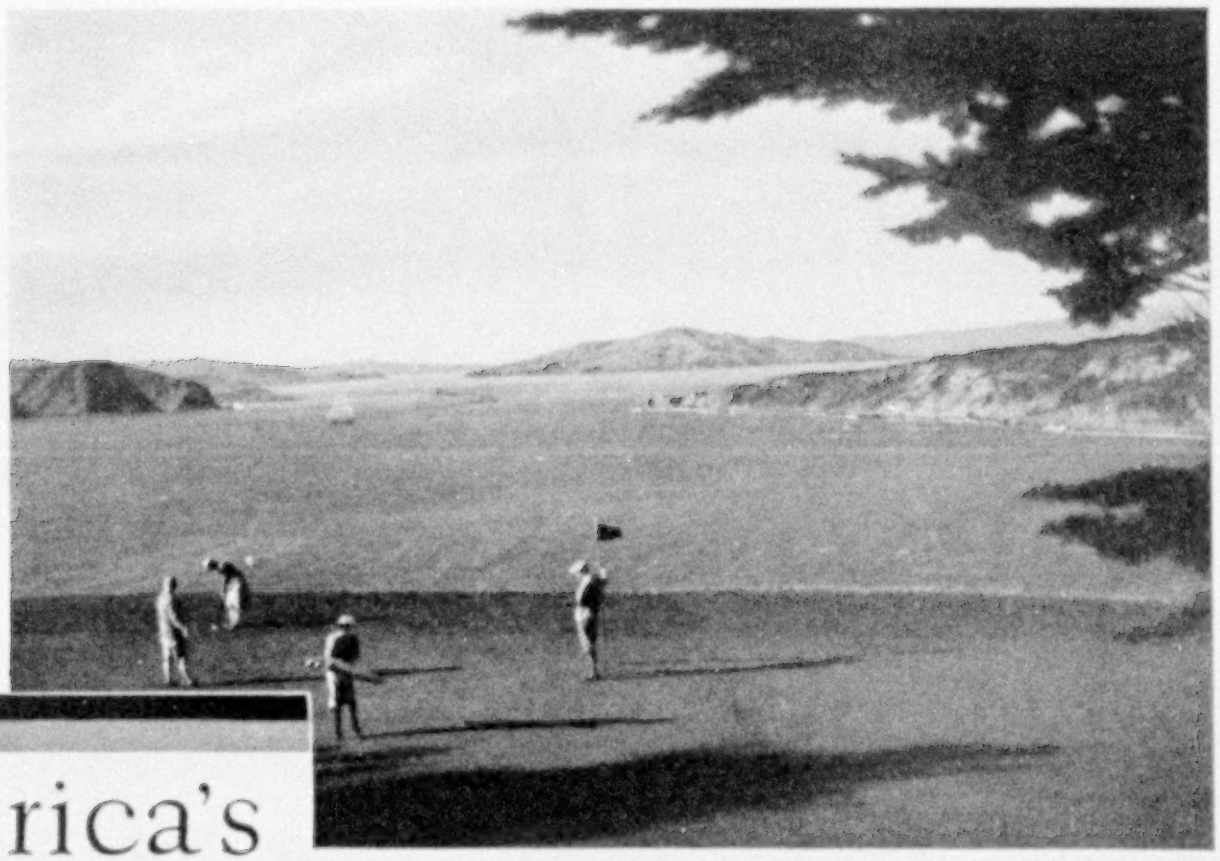
See whole Pacific Coast for about $20 more



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America's coolest summer city—

San Francisco's world-famed Chinatown

Plan to spend your vacation in and about this gay summer city. Heat prostrations are unknown. Average *maximum* summer temperature only 65°, and it doesn't rain.

San Francisco's hills, thronged harbor, Latin quarter, Chinatown, cosmopolitan hotels and flower-filled streets will fascinate you. Superb golf courses, model yacht harbors, bridle paths and playfields look out over the Golden Gate and blue Pacific. It's the tennis capital of the country. Numerous conventions; glorious musical events.

Thousands of miles of motor highways and many scenic rail lines radiate from San Francisco. The Big Trees, Yosemite, Lake Tahoe, and the wonders of four national parks and many fruitful valleys are within a few hours. Del Monte, Carmel-by-the-Sea, and the Redwood Empire will beckon you. Shrines of romance everywhere. Cool beach and cosy mountain resorts, brilliant metropolitan hotels and snug cottages offer accommodations at a variety of prices.

Very low round trip fares on all railroads will be in effect beginning May 15th, or you can motor over national highways or come by steamer via the Panama Canal. Ask your local travel agent.

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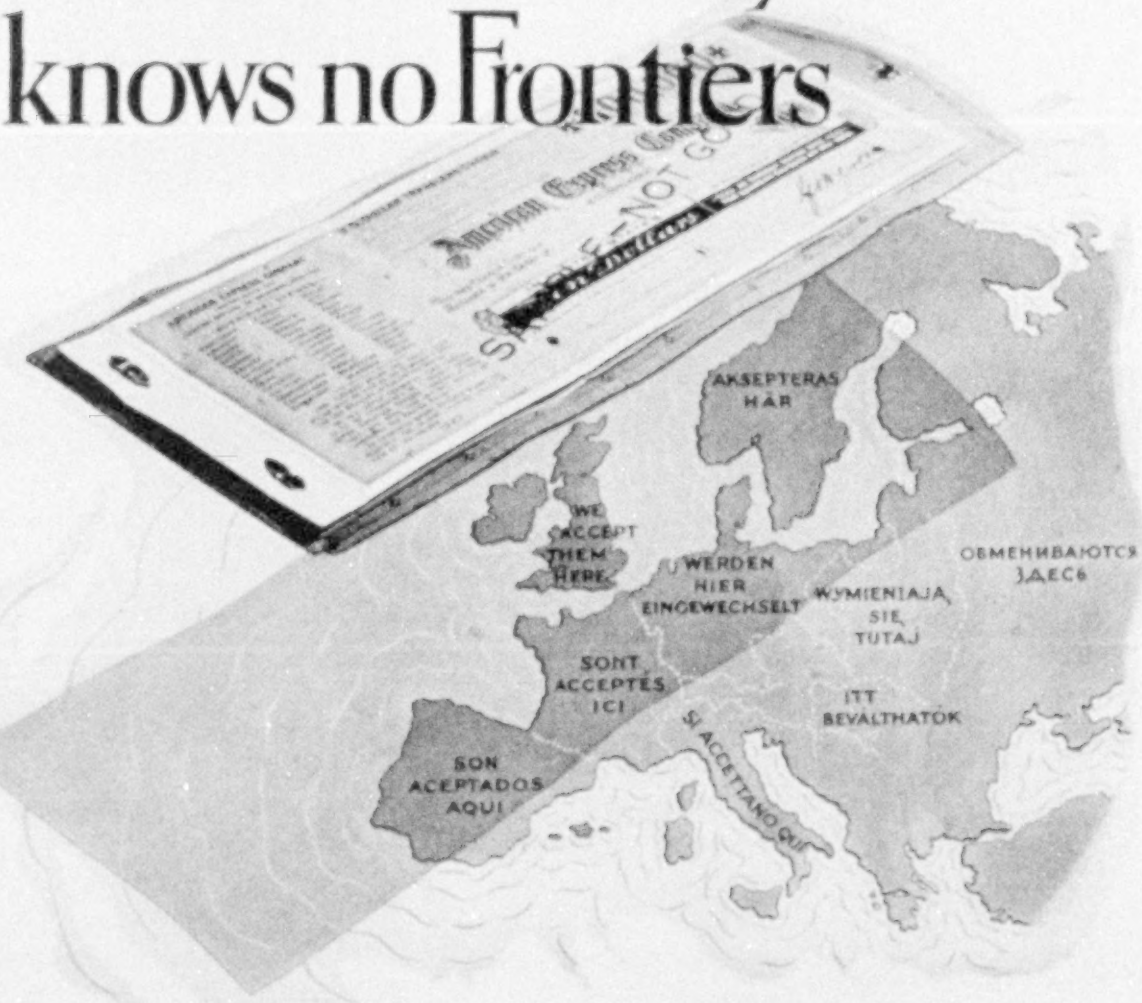

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Sold by 22,000 banks, American Express and American Railway Express offices. For practical, convenient and protective travel currency—in America or in foreign lands—merely ask for the sky-blue

Safe anywhere
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"We're not sick, Daddy. Why are you taking us to the Doctor?"
"Why? To do all we can to keep you from ever getting sick."

YOUR children will probably never forget the odd experience of being taken to the doctor when they are perfectly well. Perhaps no other act of yours could stamp more indelibly on their minds the wisdom of preventing sickness.

When your boys and girls were ill nothing was left undone to make them as comfortable as possible and to help them to get well. But have you done what you can do to spare them from future illnesses?

Have you guarded against diphtheria, typhoid, smallpox and rickets? Have you had adenoids removed? Teeth, eyes, throats, legs and feet—every part of the body should be examined. Modern medical science teaches us that in order to prevent much needless disease and suffering every child should have a complete physical examination at least once a year.

Make May 1928 a banner month for your children. Have them weighed, measured and examined for known and unknown defects. Give them a fair start toward a happy and useful life.

The Metropolitan has issued a booklet, "Out of Babyhood into Childhood", which gives valuable advice on preventable diseases with helpful suggestions concerning diet, environment and training. Mailed free upon request to the Booklet Department, Metropolitan Life Insurance Company, No. 1 Madison Avenue, New York City. Write for it.

Haley Fiske, *President.*

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Mother's Day, Sunday, May 13th

This is the world-famous Sampler specially wrapped for Mother's Day giving.

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Sampler

The Sampler is expressive of the qualities that most appeal to mothers. Inner character and goodness. Outward charm and refinement. A gentle whisper from bygone days in the quaintness of its "dress". Yet thoroughly modern in the variety of its sweets and the skill with which they are made.

Yes, *genuine* things are most acceptable to Mother. And she will recognize in the Sampler your desire to express a real affection.

Many will prefer to give the Sampler in its special Mother's Day wrap, with Lincoln's famous tribute, or other appropriate sentiments, cross-stitched in the design. The Whitman Agency near you—probably the leading drug store—will attend to all details of mailing or delivery for you.

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VOL. LIII, No. 5 WASHINGTON MAY, 1928

THE NATIONAL GEOGRAPHIC MAGAZINE

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TO BOGOTÁ AND BACK BY AIR

The Narrative of a 9,500-Mile Flight from Washington, Over Thirteen Latin-American Countries and Return, in the Single-Seater Airplane "Spirit of St. Louis"

BY COL. CHARLES A. LINDBERGH

HUBBARD GOLD MEDALIST, NATIONAL GEOGRAPHIC SOCIETY

THE modern airplane brings the remotest corner of the known world within a few hours of a metropolis. It makes every spot on this planet accessible to man.

We can fly in comfort over the ice fields of the Arctic or above equatorial jungles.

It is no longer necessary to remain close to a base and corps of mechanics. Our planes to-day will travel for thousands of miles with reasonable attention and carry passengers for but little more than the cost of rail transportation.

In countries where few railroads exist, the airplane is the only feasible means of travel over long distances.

The *Spirit of St. Louis* had covered only a little over thirty thousand miles at the end of its tour of the United States.* The plane was practically new and its engine was capable of many more hours of flying.

THE START FROM BOLLING FIELD

I always had a desire to fly in the Tropics; also, I was particularly interested in the feasibility of Pan American airlines; consequently, when I received an invitation from the President of Mexico to visit his country, it required less than a week to complete my preparation for the flight.

The tail skid cut through the mud on Bolling Field for nearly 2,000 feet and the wheels ran along for another thousand before the *Spirit of St. Louis* lifted, hopped over the puddles and into the air. Thus, shortly after noon on December 13, 1927, began my flight from Washington to Mexico, to Central America, and home through South America and over the Caribbean (see map, page 532).

Fog, clouds, and rain were all ahead. I had cloudy weather all the way to the Carolina mountains, where darkness began to fall.

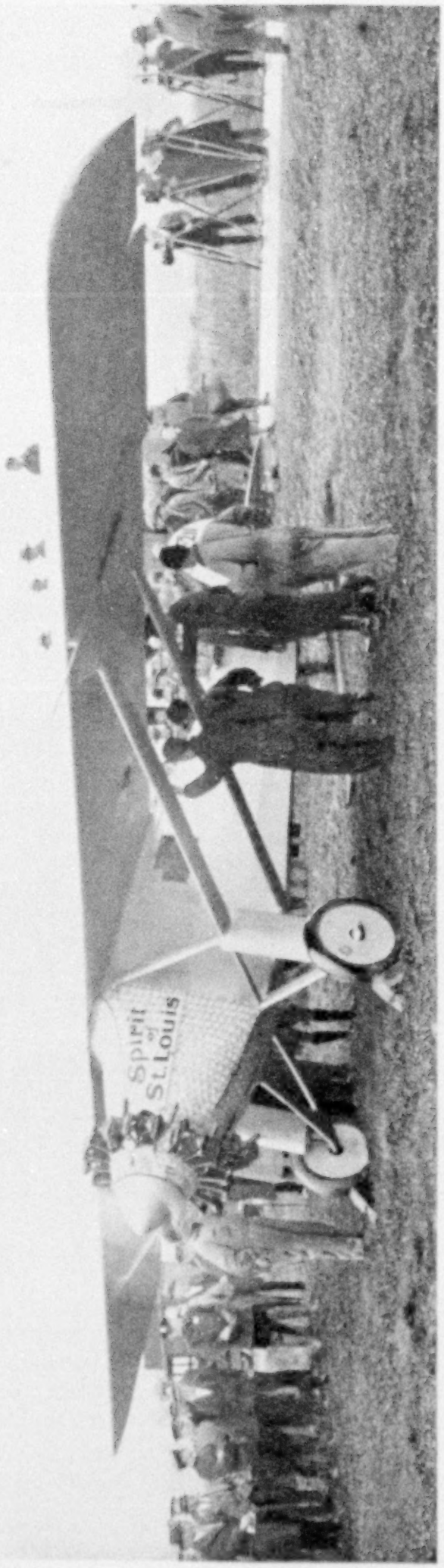
Up to midnight I saw no moon. All night the sky was overcast, with frequent rains. Occasionally I could make out lights on the ground, but seldom could I see any horizon.

This made instrument flying necessary. I had never done so much of it before, even on the flight to Paris. By instrument flying I mean the use of instruments in the dark to keep the plane level and on its course.

FLYING LESS THAN 100 FEET ABOVE THE WHITE LINE OF SURF

As the sun went down I laid a course for the Gulf which, with the aid of an

* See "Seeing America With Lindbergh," by Lieut. Donald E. Keyhoe, in the NATIONAL GEOGRAPHIC MAGAZINE for January, 1928.



Official Photograph, U. S. Army Air Corps

COLONEL LINDBERGH IN HIS PLANE, READY FOR THE LONG NONSTOP FLIGHT FROM THE CAPITAL OF THE UNITED STATES TO THE CAPITAL OF MEXICO

As soon as the aviator had taken off from mud-soaked Bolling Field, expert photographers in a fast Army plane were supposed to follow and take photographs of the *Spirit of St. Louis* with Washington and vicinity as background. Actually, however, Lindbergh traveled so fast after his take-off that the pursuing photographers did not even see him after they were in the air, although he was followed far below Alexandria, Va.

earth inductor compass, I hit fairly close to the point plotted on my map.

On the Gulf coast I struck more fog; so I had to come down low over the water, sometimes less than a hundred feet above the white line of surf. Often I lost that and flew blind until I could pick it up again. Since the transatlantic flight I had added a supersensitive altimeter to my instrument board. Without this addition, blind flying at 150 and 200 feet over the coast line would have been impossible.

One of the odd things about this flight was the length of night. On my flight to France I had only about five dark hours, because I flew from west to east, against the sun and north of 50° north latitude; but on this flight the direction was slightly west and in southern latitudes, where the nights are long; so I had thirteen hours and thirty minutes of darkness.

I recognized Tampico, near the east coast of Mexico, by its oil tanks. There was a heavy fog and I came down within 50 feet of the Pánuco River. The fog was so low I could not stay under it, so I climbed again and set a compass course for Mexico City.

LOST IN MEXICO

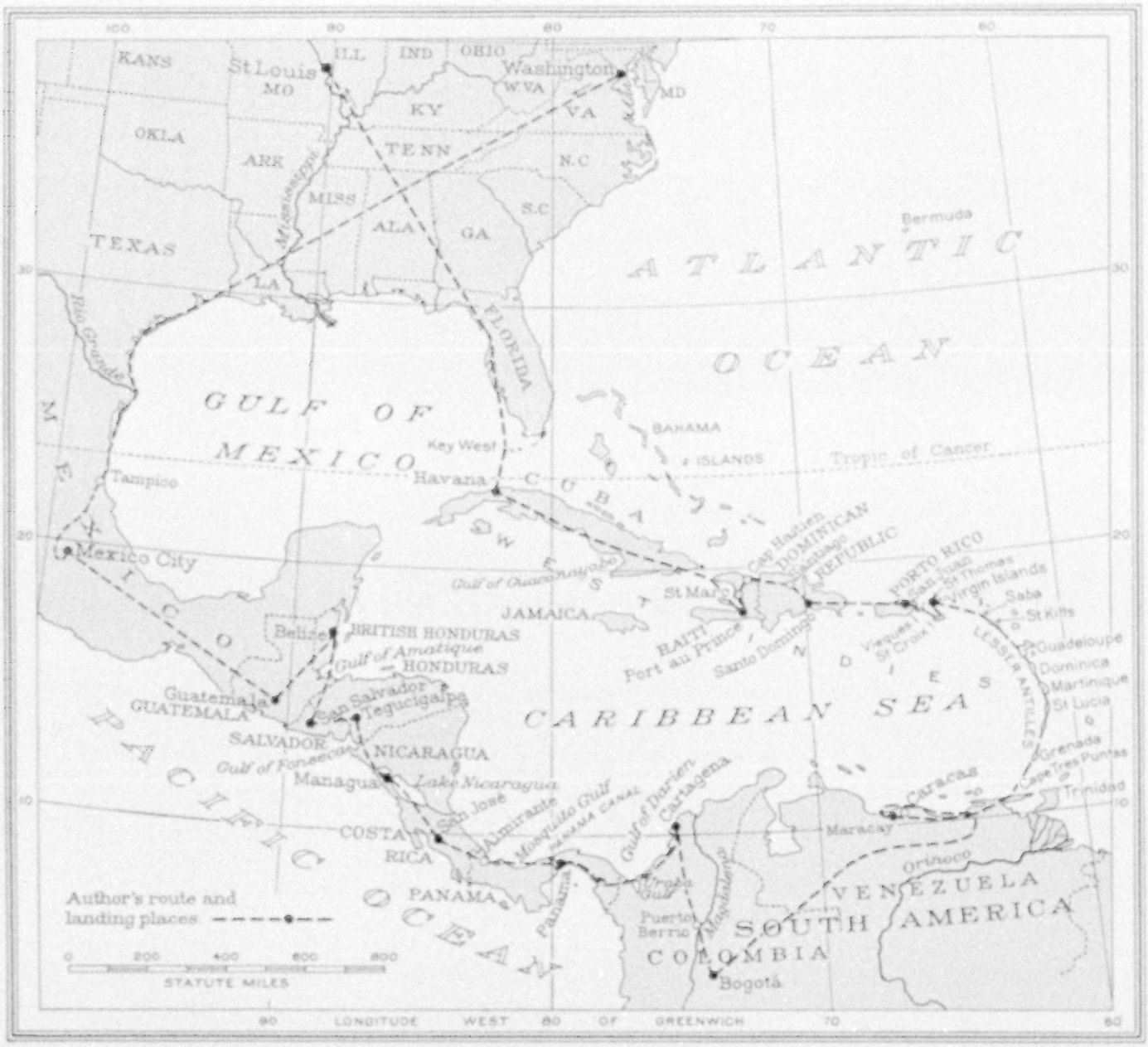
A thousand feet up I got over the clouds, and less than two hours later had passed the first mountains. I crossed a railroad and a small town. It was at this point that I made an important error in navigation by mistaking my position as south of my course, whereas it was actually north. Consequently I changed course in the wrong direction and greatly increased my error.

My mistake soon became apparent, but I was not able to locate my position. The only

Official Photograph, U. S. Army Air Corps

THE FAREWELL GLIMPSE OF WASHINGTON AS THE LATIN-AMERICAN FLIGHT BEGAN

In the right foreground is Bolling Field, at Washington. To the left, at the river's edge, is the United States Naval Air Station, opposite which, on the point of land, is the Army War College. At the left is the Speedway, encircling Potomac Park, with the Washington Monument in the distance. The group of white buildings to the right includes the U. S. Capitol, House and Senate Office buildings, Library of Congress, Union Station, and City Post Office.



Drawn by A. H. Bumstead

THE ROUTE FOLLOWED BY COLONEL LINDBERGH IN HIS FLIGHT OVER 13 LATIN-AMERICAN COUNTRIES

The journey of nearly 9,500 miles from Bolling Field, District of Columbia, over Mexico and Central America to Bogotá, Colombia, and return by way of the Lesser and Greater Antilles, to St. Louis, was made in exactly two months, with only 125 hours of actual flying time.

maps of Mexico I had been able to obtain in the United States were inaccurate and showed few natural landmarks.

Occasionally I passed over a winding railroad, but upon consulting the map I could find none that were not straight.

After following one of these for a time, I arrived over a fair-sized village and flew low past the station to pick up the name from its signboard.

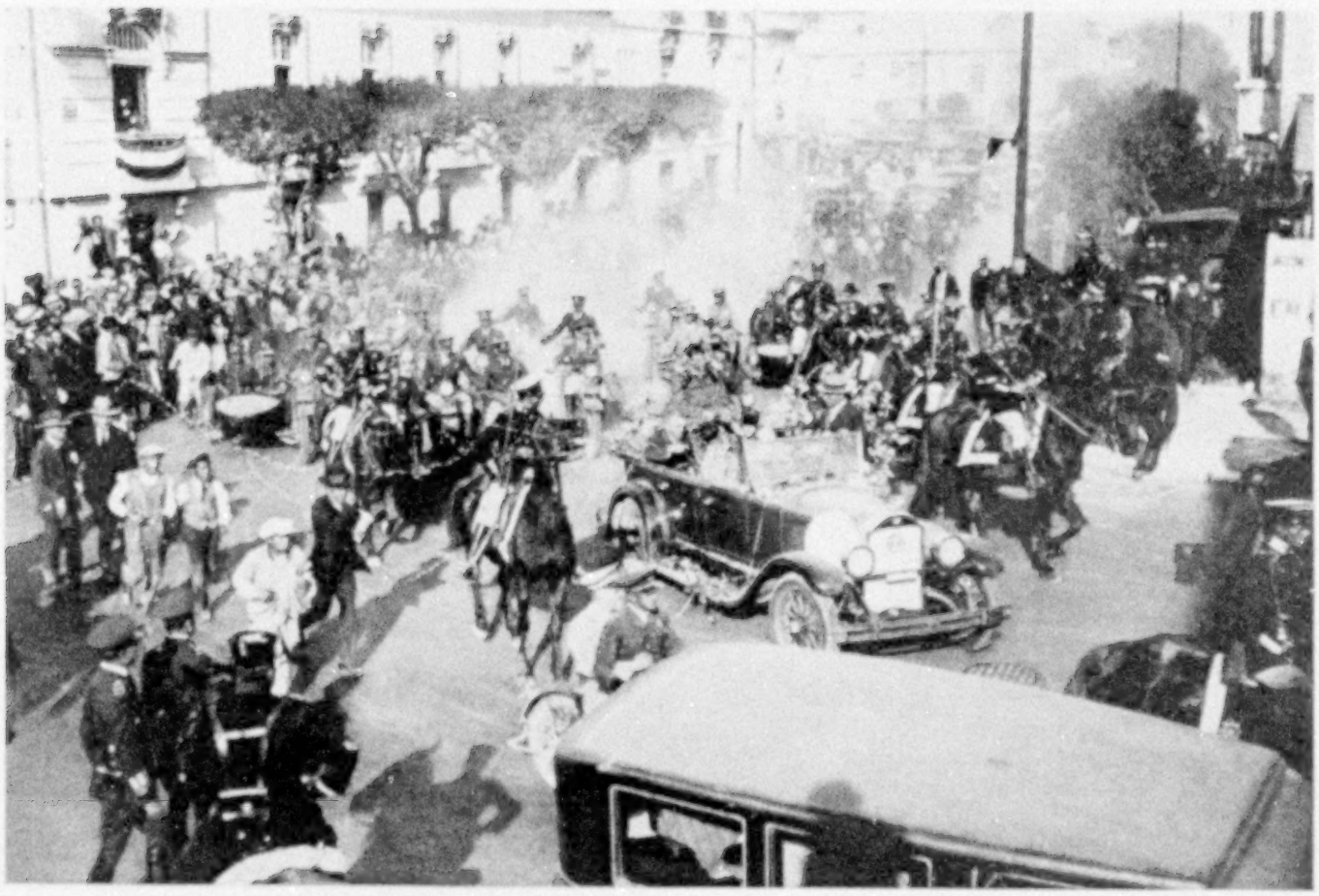
It did not, however, correspond with the names of any towns on the map. After several other similar attempts, I decided that there had been a disagreement somewhere, or that the towns had been renamed and I would have to locate myself by some other method. [Later, in Mexico City, I was presented with Mexican maps, which were surprisingly accurate and by which I was able to navigate in Mexico as easily as in the States.]

I then climbed to an altitude of over 12,000 feet.

MOUNT TOLUCA PROVES TO BE A SIGNPOST

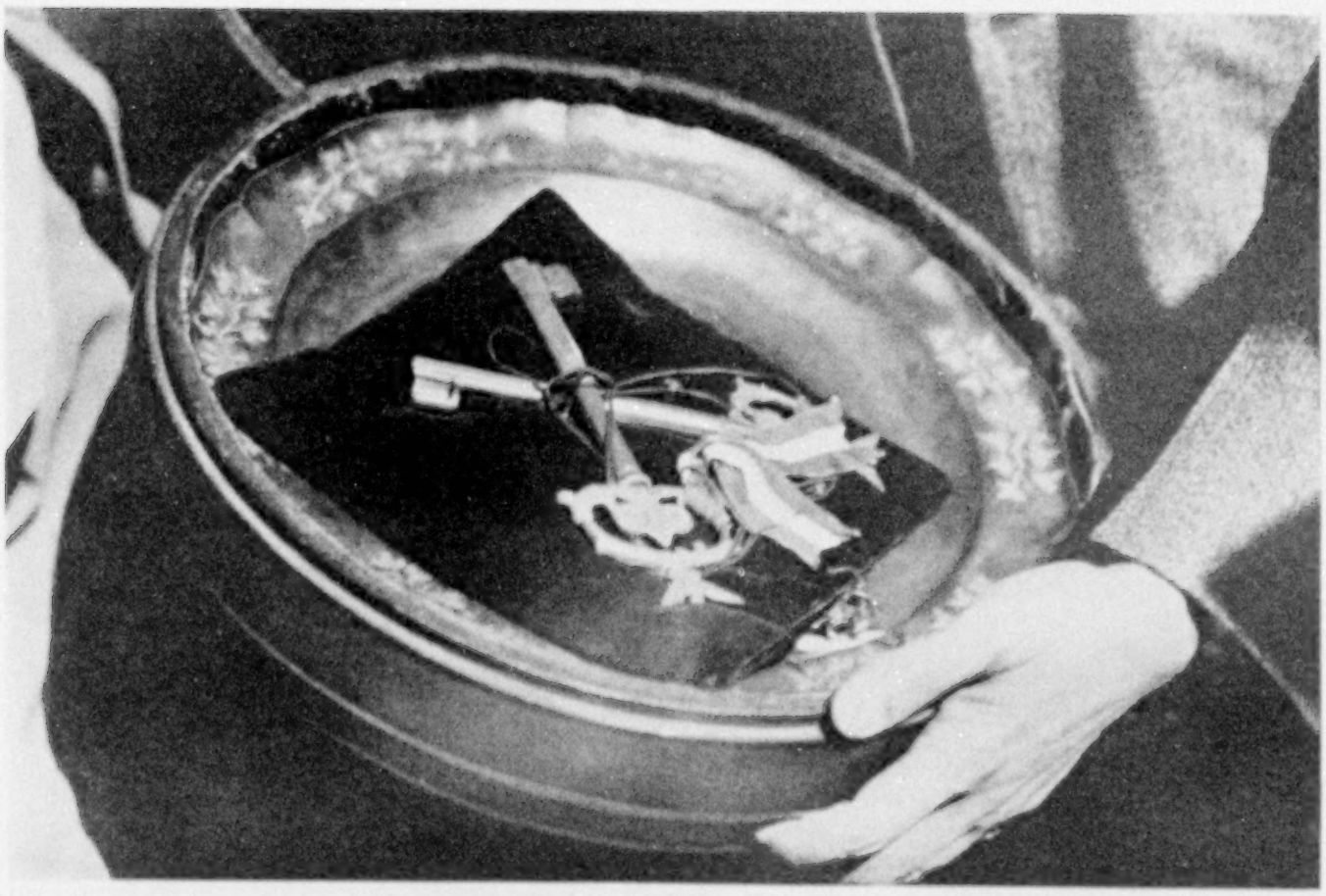
The rivers below were flowing toward the south, and far to the east was a high mountain peak towering above the others in its range. Directly underneath, the country was rough and uninhabited.

I located my position approximately by the direction of the rivers and headed east, toward the peak, which, from my map, appeared to be Mount Toluca.



Photograph courtesy Excelsior, Mexico City

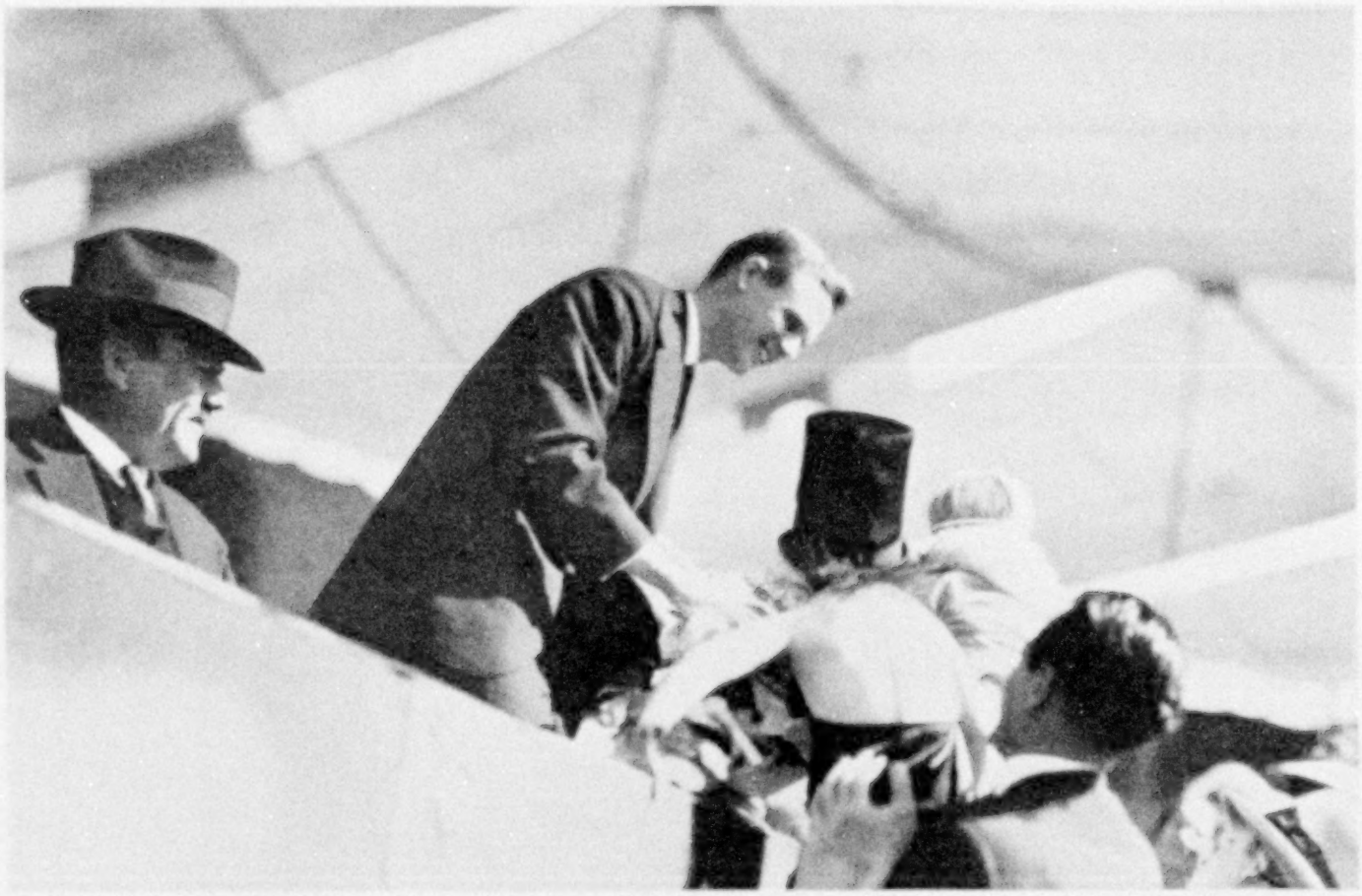
CAVALRY AND MOTORCYCLE POLICE ESCORT THE FLYER TO THE UNITED STATES EMBASSY IN MEXICO CITY



Photograph by American Photo Supply

THE KEYS TO THE CITY OF MEXICO

These symbols of the freedom of the Capital City of the Republic were presented to the American flyer by Mayor Sánchez.



Photograph courtesy Excelsior, Mexico City

A TINY DAUGHTER OF MEXICO PRESENTS VIOLETS TO AMERICA'S LONE EAGLE

Seated at Colonel Lindbergh's right is President Plutarco Elias Calles, of Mexico.

Photograph by American Photo Supply

SPECTATORS APPLAUD AS THE AVIATOR IS GREETED BY THE BULLFIGHTER

Before 35,000 people in the arena at Mexico City, the popular matador, José Ortiz, salutes Colonel Lindbergh, while cameras click in the foreground.

Photograph by American Photo Supply

MEXICO'S LEGISLATORS WELCOME COLONEL LINDBERGH

In the hall of the Chamber of Deputies the aviator was tendered a reception by the Mexican lawmakers, who were called into special session for the purpose. The young man in a light suit, facing the guest of honor, is the leader of the majority party and speaker of the House. On the walls are inscribed the names of some of the Republic's national heroes.

About an hour later I came to the largest city I had passed over since leaving Tampico.

I again attempted to shoot the station, but without result. After circling three times over the city, however, I noticed a sign saying "Hotel Toluca," painted on one of the buildings near the station.

After locating Toluca on my map as being about thirty miles west of Mexico City, I headed east, and a few minutes later, after passing over a low ridge, the city itself appeared in the distance.

I had lost between two and three hours by my mistake and flown nearly far enough to have reached the Pacific Ocean and returned to Mexico City, had I followed such a course accurately.

I landed at the airport 27 hours and 15 minutes after taking off from Bolling Field, or one hour and 15 minutes over my estimated time.

When flying becomes common each town and city will have its name painted on some prominent building. Many of our progressive cities in the States have already done this and thereby received the silent gratitude of many a pilot who has passed over on a stormy day.

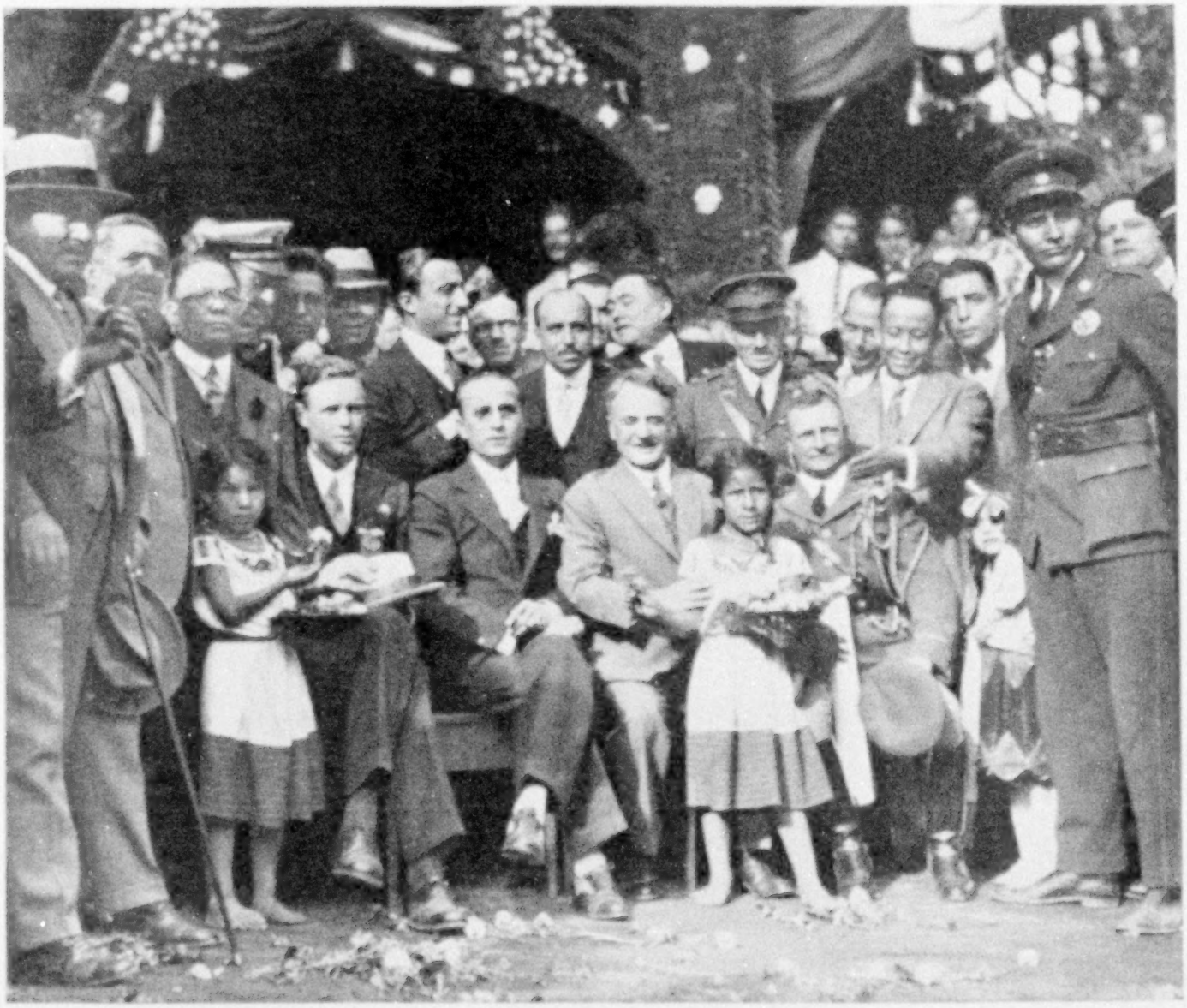
THE PRESIDENT OF MEXICO AND THE AMERICAN AMBASSADOR WELCOME THE FLYER

A large crowd had assembled on the field. Immediately after landing I was welcomed by President Calles, who had extended to me the invitation to come to Mexico, and by Ambassador Morrow, who was my host during the only too short time I was there.

The day after my arrival I flew with some of the Mexican pilots.

The flying field here is excellent, although I never saw the wind change so fast in so short a time. This may be because Mexico City lies in the bottom of a bowl in the mountains. The wind shifted as much as 180 degrees in a few seconds.

We flew all over Mexico City. I thought of the days when Cortez fought his way into this city; but it no longer resembles



Photograph by American Photo Supply

WITH THE ALDERMEN OF MEXICO CITY, THE FLYER VISITS THE BEAUTIFUL GARDENS OF XOCHIMILCO (SEE TEXT BELOW)

The floating gardens of this ancient Indian stronghold in the Aztec lake country, ten miles from the Mexican capital, supply the city markets with vegetables, fruits, and flowers (see "The Venice of Mexico," in the NATIONAL GEOGRAPHIC MAGAZINE for July, 1916).

the home of the Aztecs. With its long, wide, straight streets and avenues, it looks more as though laid out by an artist.

It is hard to realize that this city is nearly 8,000 feet above the sea; but you realize this when you take off from the flying field. The air is so light that a long run is necessary. The Mexican pilots have this to contend with in all of their flying activities, yet are training students daily, even under the adverse conditions brought about by near-by mountains, variable winds, and high altitude.

SEEING THE WONDERS OF MEXICO

December 18th was one of those wonderful Mexican days. I went to see an exhibition of roping and riding at the famous Rancho de Charros, and in the afternoon I attended a bullfight, where one of the matadors presented me with a beautiful cape (see illustration, page 534).

Late in the evening we went for a motor ride out into this valley of romantic history, amid remains of old Aztec and Toltec civilization (see page 545).

It is hard to believe now that once the whole valley was a great lake, with small islands on which ancient cities were built.

Always I found something new and surprising, as when they took me to see the "floating gardens" in Xochimilco. Once these islands were said to have floated; to-day they seem well anchored. Moving through the narrow canals among these islands was like a trip through a primitive Venice. Our boat passed many gardens where vegetables and flowers are

grown for sale in the cities.

Once all of Mexico City was like Xochimilco, I was told. It was so when Cortez came—just a series of little islands. Gradually the canals were filled up, the lake was drained, and now only these small beauty spots are left. But as we were poled along, it was like moving into another world of hundreds of years ago.

During my visit in Mexico City I had the honor of taking the President of Mexico for his first flight. He was able to look down upon his palace at Chapultepec, into the patios, the gardens, and upon the walks laid out in color beneath him.

It is easy to understand, from the air, why the ancients chose this site for their capital.

We flew over the city and in a wide circle which carried us out over the plains around it.

One day the Mexican Army pilots took me as their guest to Cuernavaca. This gave me a new idea of the beauty of the country. It took us two hours and a half, however, to make a trip which a plane could have done in 30 minutes.

Photograph by Wide World

THE AVIATOR SEES MEXICO BY BOAT

Colonel Lindbergh and Ambassador Morrow ride through the canals at Xochimilco, the Venice of Mexico (see text, page 536).

VOLCANIC PEAKS MARK THE ROUTE FROM THE MEXICAN TO THE GUATEMALAN CAPITAL

It was 6:35 on the morning of December 28 when I took off into the clear, cool atmosphere and turned southeast on an airline for Guatemala City.

This flight was unusually interesting, from the viewpoint of scenery, all of which was new to me; but, unfortunately, the ground was not always in sight.

Soon after leaving Mexico City low fog and clouds appeared, covering many of the valleys. Some fog areas were as much as 50 miles long. They lay chiefly over the lowlands, especially toward the Gulf. I did not see the Gulf, but did get a glimpse of the Pacific Ocean, at one time, about 50 miles away.

Mountain-peak volcanoes, numerous in this region, were visible everywhere, with mist-filled valleys between them. Several volcanoes, both in Mexico and Guatemala, were smoking—that is, there was a slight vapor of steam rising from their cones.

Photograph by American Photo Supply

A REVOLVING CIRCLE TEHUANA DANCE IN THE MEXICO CITY STADIUM

Descendants of the once powerful Zapotecs, the Tehuana women, famous for their beauty and graceful dances, much resemble the women of Burma. Like the orientals, too, they delight in brilliant colors and much jewelry. This Tehuana dance was staged during the fiesta in honor of Colonel Lindbergh's visit.

Photograph by American Photo Supply

BEAUTY LOOKS UP AT THE AIRMAN, IGNORING THE CAMERA

In this group of Mexico City's youth and pulchritude, assembled for one of the Lindbergh festivals, the simple "sport hat" of Paris contrasts with the highly decorated sombrero of Old Mexico. In the foreground hangs a Mexican serape, or blanket. The best of these are made by Indians, on hand looms, of wool colored with vegetable dyes that never fade.

Photograph by American Photo Supply

AMERICA'S AVIATION ACE PARTICIPATES IN THE DEDICATION OF A LIBRARY

The flyer is seated on the platform of the Lincoln Library, while the head of the Library Division of Mexico's Department of Public Education (right) makes her dedicatory address.

Photograph courtesy Excelsior, Mexico City

YOUNG PATRONS OF THE NEW LINCOLN LIBRARY SURROUND THE AMERICAN FLYER

To Colonel Lindbergh's left and on the step below stands the aviator's host, Ambassador Morrow, who bore much the same relation to his gala visit to the Mexican capital that Ambassador Herrick did in Paris, after the *Spirit of St. Louis's* transatlantic flight in May, 1927. At Ambassador Morrow's left is Dr. José M. Puig Casauranc, Mexico's Secretary of Public Education.

Photograph by American Photo Supply

THE GIANT PLANE THAT BROUGHT THE AMERICAN FLYER'S MOTHER TO MEXICO ON VALBUENA FIELD

At the invitation of the American Ambassador, Mrs. Lindbergh flew from Detroit to Mexico City, by easy stages, in order to spend the Christmas holidays with her distinguished son. This is the same airport at which the *Spirit of St. Louis* had previously landed.

These mountains are high and very rugged, but almost entirely covered by vegetation. Their difference in this respect from the Rockies was striking. Some of the mountains were entirely covered with palms.

Even more impressive were the small farms which men cultivate high up the slopes of these mountains. Some fields were fully 10,000 feet above the sea, and there were others clinging to the sides of the peaks at an angle of more than 45 degrees.

I flew at an average altitude of 7,000 feet and at a maximum of 12,000; but, as Mexico has an elevation of more than 7,000 feet and Guatemala City 5,000, and much of the intervening area is mountainous or a high plateau, sometimes this was not high above the ground. I flew a few hundred feet or less over some of the higher mountains, passing quite close, occasionally, to the villages.

These villages, which are mostly straw-thatched and quite individual in appearance, are not, however, seen frequently, but are very widely scattered. In fact, for stretches of 50 miles at a time there was not a single sign of human habitation. It seemed to be a vast, virgin, tropical forest, with sharp mountain peaks outstanding in it.

Villagers came outside of their houses to watch me pass. Most of them had never seen an airplane before.

My route did not take me over cities of any size between the two capitals.

TRIPLE-MOTORED PLANES RECOMMENDED FOR DANGEROUS ROUTE

Very few places appeared where a forced landing would be possible, though I did notice some here and there. One got the impression from the air that in the case of a forced landing in much of this region it probably would take weeks to reach any habitation. The jungle in the lowlands, where it was visible through the

Photograph by American Photo Supply

REVIEWING THE PARADE OF THE MEXICAN LABOR UNIONS

In receiving this notable manifestation of good will on the part of the Mexican working classes, Colonel Lindbergh stood on the central balcony of the National Palace, which contains the office of the President of the Republic.

fog or clouds, seemed extremely thick and extensive.

I believe, however, that the territory from Mexico City to Guatemala City is practicable for commercial flying with triple-motored ships, although it probably would be better to follow along the coast line.

I flew a compass course the entire distance, depending almost entirely on the earth inductor compass.

I approached Guatemala City from the northwest, flying considerably to the north of the big volcanoes which rise between it and the Pacific.

The sky was clear over Guatemala, except for scattered clouds hanging around the horizon and over the volcanoes. The city was visible for a considerable distance. It looked white and beautiful from the air, with its houses built in squares around a court or patio and green with vegetation. The streets are blocked off, as in most cities in the United States, making one, in this respect, seem at home, despite the tropical plants.

The whole city stands out strikingly against the surrounding plateau, fringed with mountains and volcanoes, and against the extensive uninhabited or sparsely settled areas to the northwest.

GUATEMALA CROWD BREAKS THROUGH A CORDON OF SOLDIERS

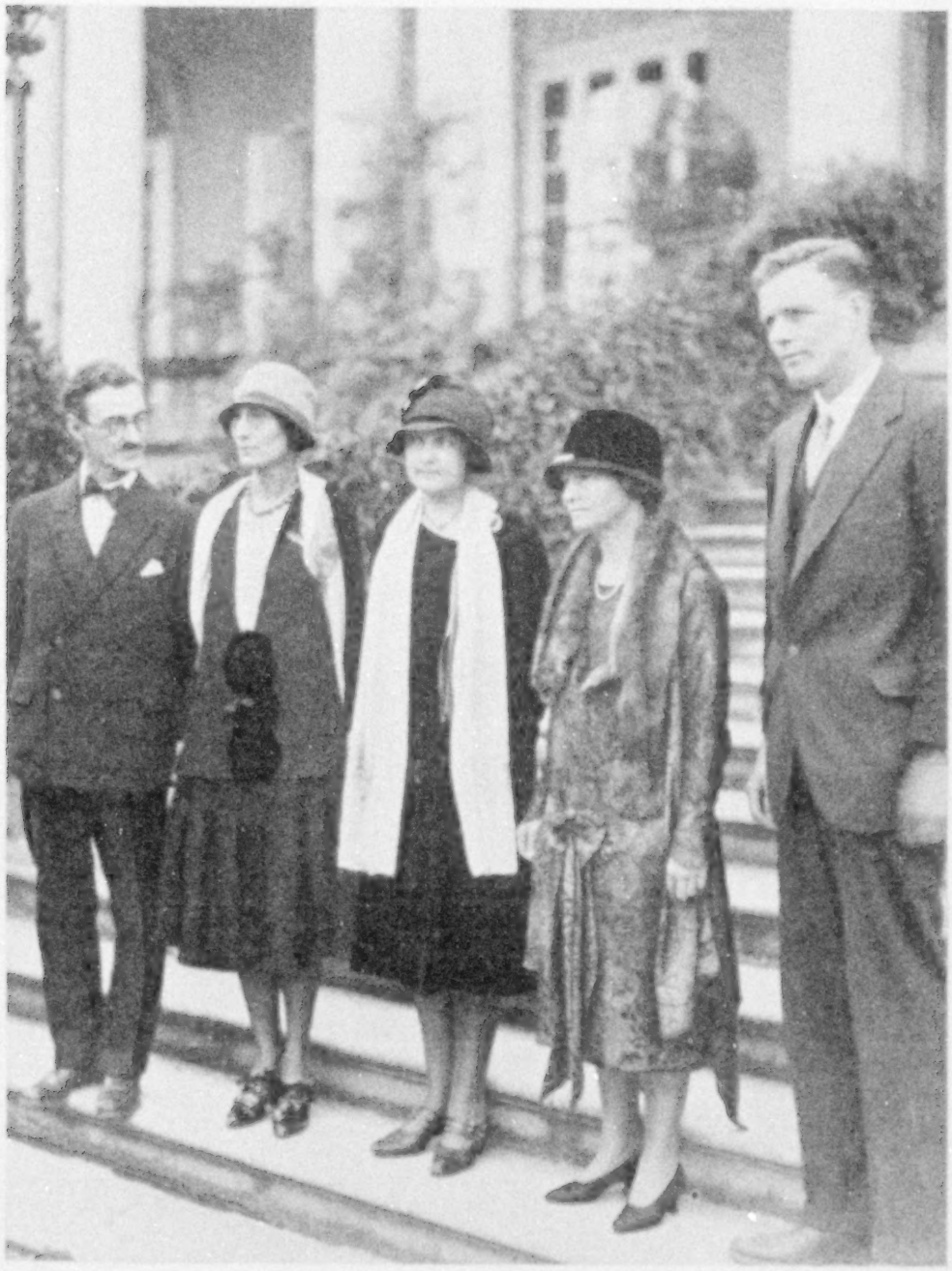
The flying had been smooth all the way from Mexico City and I made the 675 miles in 7 hours and 5 minutes.

For a moment, when landing at Guatemala, I feared people in the crowd might be injured. The first time I "dragged" the field, which is always done over unknown landing places, thousands of spectators apparently thought I was actually landing. They broke through the cordon of soldiers and swarmed over the field.

When I did land, after dragging the field once more, the crowd had been pushed back; but they broke through immediately and had crowded around the plane by the time I got it up in front of the hangar.

Ever since a trip to Panama, years before, I had wanted to see more of Central

America. But in flying one gets to see but little detail of the country beneath. These glimpses from the sky only create a desire to see the land below in a more leisurely manner. So it was with keen pleasure that I rode about, enjoying the city and its agreeable climate. It was hard to realize, amid the palms, bamboos, and strange flowering trees of Guatemala, that up in the States, at the same time, many people were shivering with the cold of midwinter.



Photograph by American Photo Supply

IN THE GARDENS OF THE AMERICAN EMBASSY AT MEXICO

At Colonel Lindbergh's right are Mrs. Dwight Morrow, wife of the American Ambassador; Mrs. Lindbergh, and Mr. and Mrs. W. B. Stout, who accompanied Mrs. Lindbergh on her flight from Detroit to Mexico City.

THE AVIATOR IS MADE A CITIZEN OF GUATEMALA

As I found later, Guatemala City is not much different from many other Central American capitals. Numerous automobiles and many fine new buildings give this place a very modern air. Yet Guatemala City is one of the oldest centers of Western civilization. Alvarado, one of the lieutenants of Cortez, came here from Mexico 400 years ago and built the first Guatemala City. When I remember all the rough country I flew over on the way here from Mexico, I can appreciate what a difficult march it was for Alvarado and his force early in the 16th century.

The city presented me with a hand-painted scroll, making me one of its citizens; also, I heard a number of speeches in English; apparently many Guatemalans understand our language.

They showed me a remarkable physical map of Guatemala constructed by a native engineer. It shows the entire country on the horizontal scale of 1 to 10,000 and a vertical scale of 1 to 2,000. Some sharp volcanoes, which stand out like teeth on this map, six feet high, represent the 12,000-foot peaks I flew between the day before. This map is said to be unique in the world. It gave me a clear idea of the mountain ranges and the lowlands on my course to Belize, and between Belize and San Salvador, over which I flew later.

At dawn on December 30 I left Guatemala City for Belize. Visibility was not good. The city was covered with fog, and from the air, as I looked down, I could only catch glimpses of houses through holes in the fog bank, which

Photograph by American Photo Supply

LABOR UNIONS, HONORING LINDBERGH, PARADED BEFORE MEXICO'S FAMOUS CATHEDRAL (SEE, ALSO, PAGES 542 AND 546)

This magnificent edifice is one of the largest churches on the Western Continent. Tradition says its foundations are composed largely of sculptured Indian images and of fragments of building material which once formed the great Aztec temple that stood near here when Cortez conquered Montezuma. It was begun in 1573. Many wealthy Spaniards contributed ornaments of gold and silver, and a miner gave a chalice covered with gems and valued at $300,000. Many peons believe that this giant building is hung on chains to prevent its destruction by earthquakes.

Photograph by American Photo Supply

THE PYRAMIDS OF SAN JUAN TEOTIHUACÁN, HOLDING THE SECRETS OF A PREHISTORIC RACE, WERE VISITED BY THE AMERICAN FLYER

The origin of this City of the Gods, 28 miles northeast of Mexico City, is buried in the past, but its immense yields of archeological data indicate that once it was a metropolis of at least 100,000 people. Two of the largest artificial mounds in North America, the Pyramids of the Sun and the Moon, dominate the area, but there are also many minor ones (see "An Interesting Visit to the Ancient Pyramids of San Juan Teotihuacán," in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1910). The archeological zone of 494 acres is being excavated by the Mexican Government.

Photograph by American Photo Supply

"IN LINDY'S HANDS WAR'S MOST TERRIBLE WEAPON TURNS TO A DOVE OF PEACE," SAYS A BANNER CARRIED BY MEXICAN WORKMEN

stretched out 60 miles to the base of the mountains.

THE FIRST PLANE TO FLY OVER BRITISH HONDURAS

I set a compass course straight for Belize. This carried me over much mountainous and uninhabited country. Now and then, however, I saw small grass huts with tiny cultivated patches around them; but on this whole flight I did not see one place where I might have landed without injury to the plane.

As I approached the coast, the country became less mountainous; also, a heavy fog set in and I had to fly about 6,000 feet to clear it.

Two or three times in the last two hours I tried to get under that fog, but it hung close down to the tree tops; so I had to get up again, navigating blindly by instruments.

At last I located my position about 25 miles south of Belize. To reach the city, I had to fly low along a beach fringed with coconut palms. I found the polo field and landed. Mine was the first land plane to fly over British Honduras, I was told (see page 552).

Belize is a British colony and its hospitality to me was of the good old British sort. After a night of festivity—and it was restful to enjoy once more a common language—I was taken for a launch ride up the Belize River.

Looking into the dense growth along the banks, I realized what a forced landing in that region might have entailed. The river on both sides is bordered with mangrove swamps. Even on higher land the vegetation is so dense that weeks might be required to travel any distance, where there were no trails. Several miles up the river we visited the Botanical Gardens, where the Government is experimenting with native trees and plants.

SPLENDID DISCIPLINE AT BELIZE

In the morning the Governor, Sir John Burdon, with a band of music and many people, came to the field to see me start. Perfect order was maintained. With the spectators under control, there was no danger of hitting any of them, for which I was very grateful. It was a fine example of British discipline.

I circled over Belize; then set my course for San Salvador. The rough air joggled

© Thomas F. Lee

A HERD OF RANGE CATTLE IN A HILLSIDE FIELD OF JARAGUA GRASS

Certain parts of Guatemala are especially suitable for cattle raising, and hides rank high among this republic's exports.

the magnetic compass, and without the earth inductor, by which I navigated, it would have been impossible to fly as straight on a course. The line of flight took me along the coast until I entered Guatemala.

The scenery was unusually interesting. There was dense green jungle all over the lowlands, and the Gulf was dotted with tiny keys covered with mangrove and palm trees.

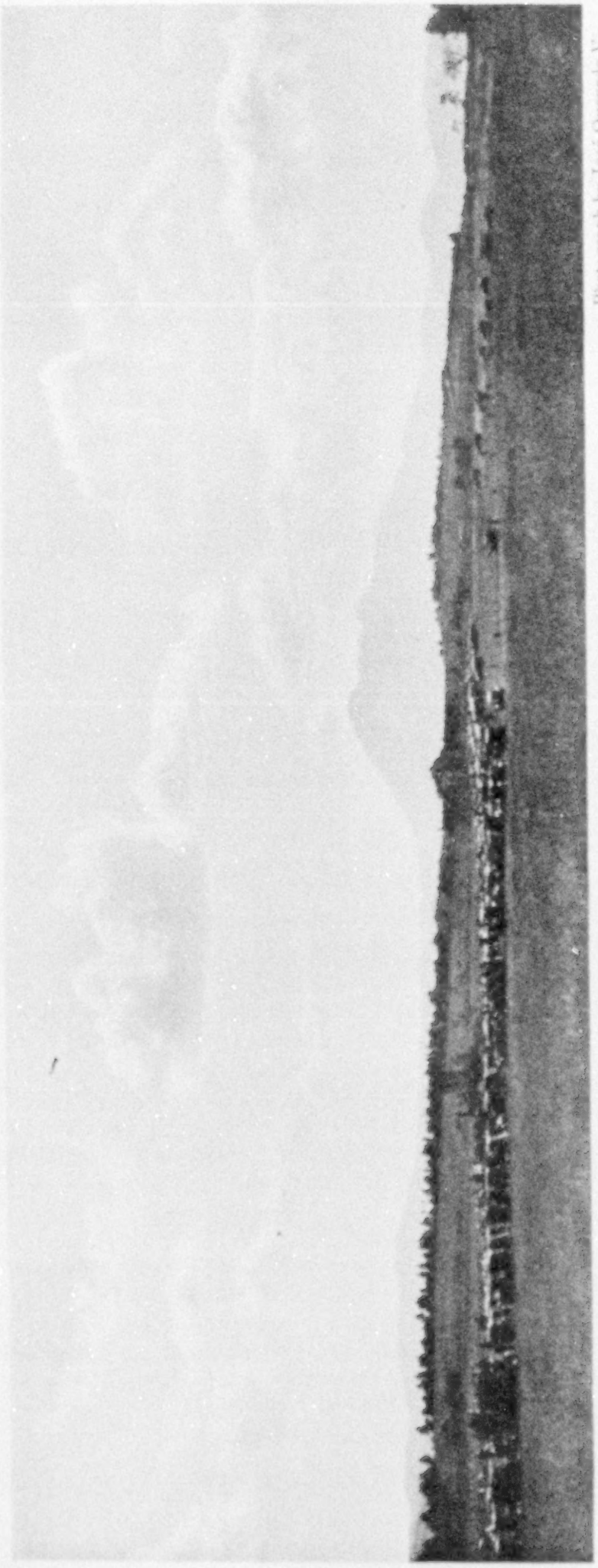
After passing West Saint Anns Creek, I left British Honduras, crossed the Gulf of Amatique, and flew between Livingston and Puerto Barrios. Below, over the lowlands, there stretched out for miles the dark-green foliage of banana plantations. Beyond Livingston I was surprised to see what appeared to be a big gold dredge, which had cut through the jungle, leaving a trail of destruction behind.

The area over which I flew was more inhabited than I found Guatemala, on the way to Belize; yet it was far from thickly settled. Population grew denser after I crossed the frontier into Salvador. In the mountains I saw more of the little grass huts, seemingly lost in the foliage, for I could see no sign of trail or road anywhere near them. Around each hut was an acre or two of cultivated ground. The Indians living here, I was told, use these small patches to grow the corn for their tortillas.

These mountains in Salvador are extremely broken, with a labyrinth of ridges and deep canyons. Most of the valleys were filled with fog or clouds. The map by which I flew was on such a small scale that on it I could cover all of Salvador with two fingers. Navigation was consequently rather difficult.

A CORDIAL WELCOME IN SAN SALVADOR

As I approached the city of San Salvador, I saw one of the planes which had been sent out to escort me in. Apparently, however, it did not see me. I know from



Photograph by José Quevelo V.

THE "SPIRIT OF ST. LOUIS" OVER THE LANDING FIELD AT GUATEMALA CITY

Before landing in strange places, Colonel Lindbergh invariably "dragged the field," or flew low over it, several times to judge its extent and condition. Here the enthusiastic crowd which had assembled to welcome the American flyer broke through the cordon of soldiers and overflowed upon the field (see text, page 542). Far in the background rises the volcano of Pacaya.

my own experience how difficult it is to find and meet another plane when one is uncertain as to the exact direction the visitor is coming from.

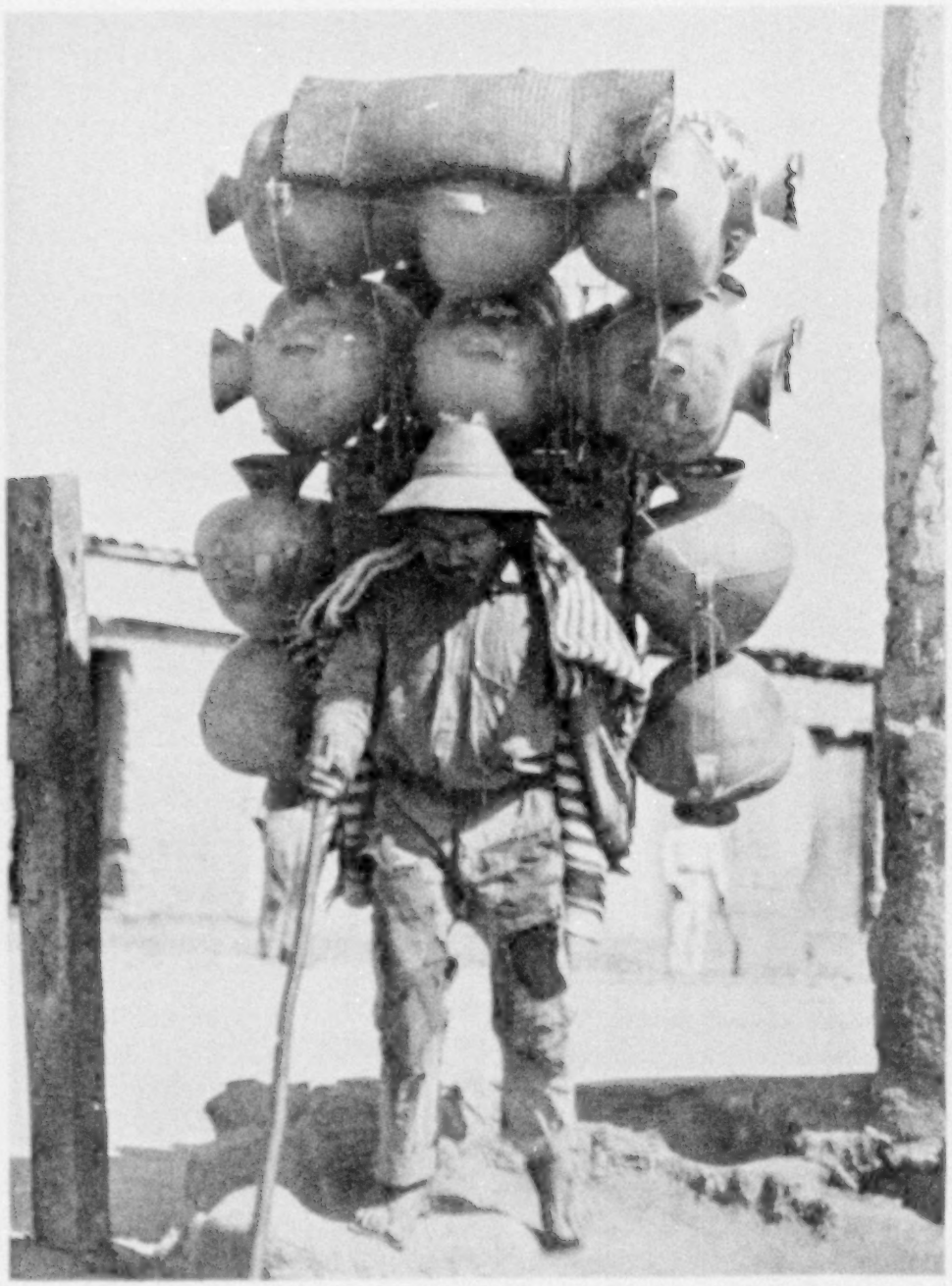
Here, as elsewhere in Central America, the people were most cordial and did all they could to make my visit comfortable. When I left, on the morning of January 3, a squadron of Salvadorean planes saw me off.

I struck an airline northeast for Tegucigalpa. In fine weather and with good visibility I climbed to about 4,000 feet and passed over the cities of Cojutepeque and Sensuntepeque; then toward the mountains where the Lempa River forms the boundary between Salvador and Honduras.

THE ROUGHEST AIR OF LINDBERGH'S FLYING EXPERIENCE

Just across the river I struck a norther. It was blowing over the mountains and bringing thick clouds. For fifteen minutes I was in the roughest air I ever experienced. It threw the plane up, down, and on its side; several times it threw me against the top of the cabin. My goggles, hanging on the stabilizer control lever, were thrown against the top of the cabin and fell in the back of the fuselage.

Rough air is caused by currents and not, as commonly supposed, by pockets. A plane passing from an ascending current into one descending is forced downward in proportion to the velocity of the



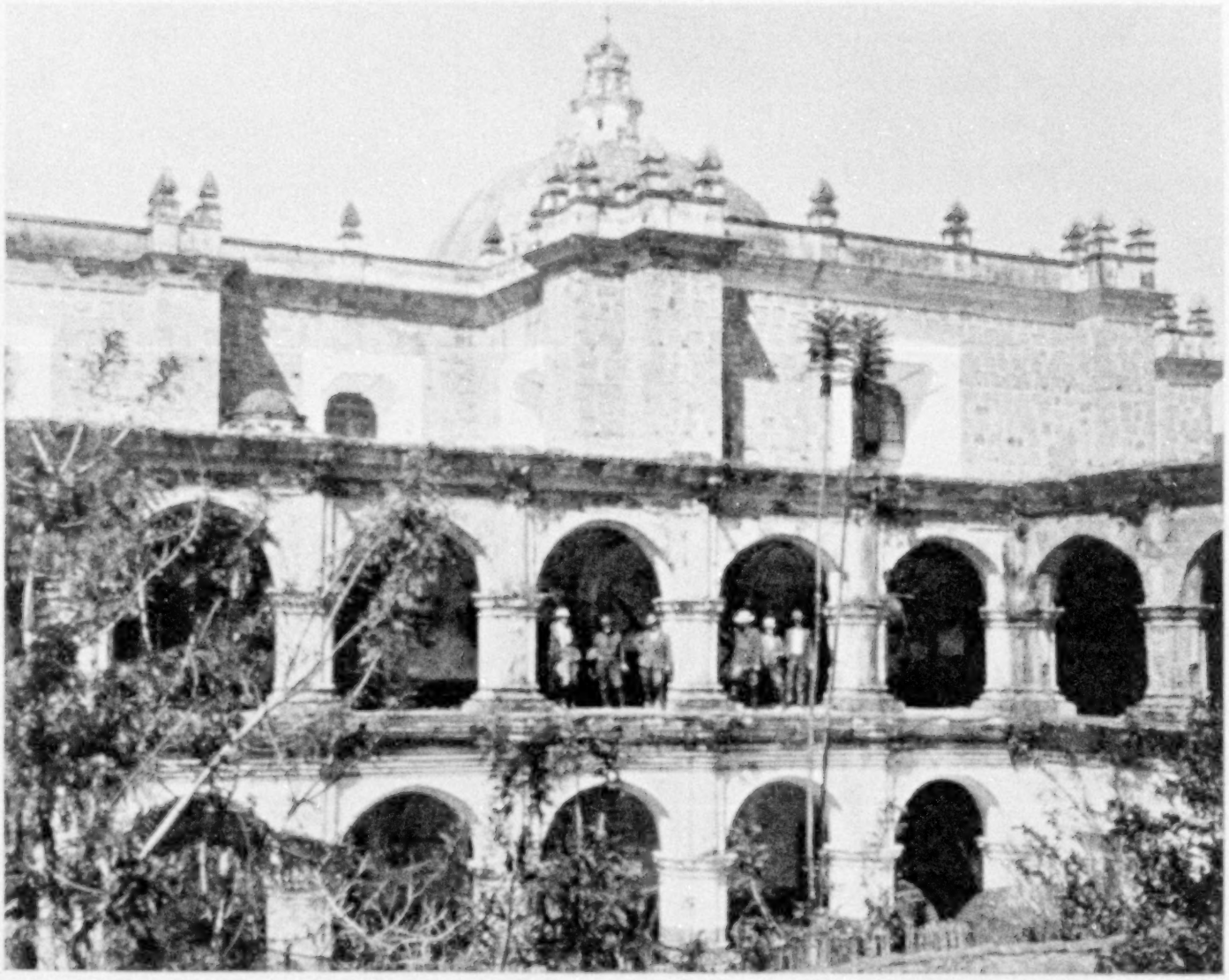
A POTTERY PORTER OF GUATEMALA

The human back is still the common vehicle in regions where the roads are few. These light but bulky jars are lashed to a *cacaste*, or wooden frame. When let down, it stands like a chair and saves the fragile earthenware from breaking.

© Thomas F. Lee

THEY SURROUND THEIR HUTS WITH CORNSTALK WALLS

Corn is the staff of life in Central America. These Guatemalan Indians, whose mountain villages Colonel Lindbergh saw from the air (see text, page 541), use dried cornstalks, tightly laced together, as fences for their huts.



© Thomas F. Lee

SOME OF THE EARLIEST SPANISH STRUCTURES IN AMERICA ARE TO BE FOUND IN GUATEMALA

Long before there were any permanent European colonies in what is now the United States, the lieutenants of Cortez had explored and started settlements in Guatemala. In this massive, arched ruin of the Escuela de Cristo at Antigua, some of the walls are 8 to 10 feet thick; but even this solid masonry was seriously damaged by earthquakes in the 18th century.

currents encountered. This was the first really rough air I had struck since leaving the United States.

I found much smoother air at an altitude of 6,000 feet, approximately level with the bottom of the cloud field. As the clouds covered the mountains, I detoured slightly to the south. I was now well into Honduras and crossing the Goascorán River.

I had three different maps, and by combining this information was able to keep a fairly accurate location of my position. One map was bought at a stationery store; the second torn from a wall map; the third a page from a magazine. When two wireless towers appeared in the distance, I knew I was nearing Tegucigalpa. Over the city it was raining hard. On a hill near by cannon were being fired. I could not hear the reports, but could see the smoke and flame shoot from the muzzles. I came down, dragged the field three times, and landed.

For two days I visited with the friendly people of Tegucigalpa, and it was with real regret that I took the air on January 5 for the hop to Managua.

Most of the way I flew high—about 8,000 feet. I crossed the Honduras-Nicaragua border near the River Negro, which runs into the Gulf of Fonseca.

SMOKING VOLCANOES MARK THE ROUTE

My course from Tegucigalpa lay straight to León, a city of Nicaragua near the Pacific coast. From it a railroad is easily followed to Managua.

© Thomas F. Lee

A PRIMITIVE METHOD OF BURNING THE GLAZE ON POTTERY

Weaving and the making of pottery are the two most important arts of the Guatemalan Indians. It is interesting to note how the Indians have adapted themselves to their environment, and particularly the way in which they utilize the natural resources found close at hand. Thus, in the region roundabout Totonicapán, the soil is not particularly suitable for agriculture, but, as good clay is available, it is the center of the pottery industry.

As I came out of the mountains, halfway on the trip, the coast appeared ahead, with the volcanic islands rising from the Gulf of Fonseca on my right. From this point on to Managua the Pacific Ocean was constantly in view on the western horizon.

In Nicaragua I passed over an extinct volcano containing three concentric craters. Several medium-sized trees were growing in the craters and there was no evidence of recent activity. According to my map, I was over El Viejo volcano—5,800 feet. About half a mile away, and perhaps 2,000 feet lower, was another. Its crater seemed about half a mile wide and looked level at the bottom. It had no trees in it, but was covered with a green sod.

Fifteen miles farther on I came to a third volcano. It was active and smoking heavily, with no trace of vegetation near by. One side of the crater was burning and throwing off dense fumes. From here on my route seemed marked with smoking volcanoes. The last one was Momotombo, close to Managua.

I had flown as high as 11,000 feet on this trip from Tegucigalpa. Above the city of León I came down close to earth and could see people running out into the streets to see the plane. I circled over the city two or three times and then headed toward Managua. This city was easy to locate because of its position near Lake Nicaragua. The field was large and well marked with a number of Marine planes lined up along the north side.

An air service between Tegucigalpa and Managua could be simply maintained, as there are plenty of landing places along the route.

At Managua the people of Nicaragua and the United States Marine flyers gave me a warm welcome. While there I was taken by motor to El Tazate, the coffee plantation of a prominent citizen of Nicaragua and a graduate of Cornell. This estate lies fifteen miles from the city, among low hills covered with banana

THE DIFFICULTIES OF RAILROAD CONSTRUCTION IN CENTRAL AMERICA ARE SUGGESTED IN THIS SINUOUS TRACK

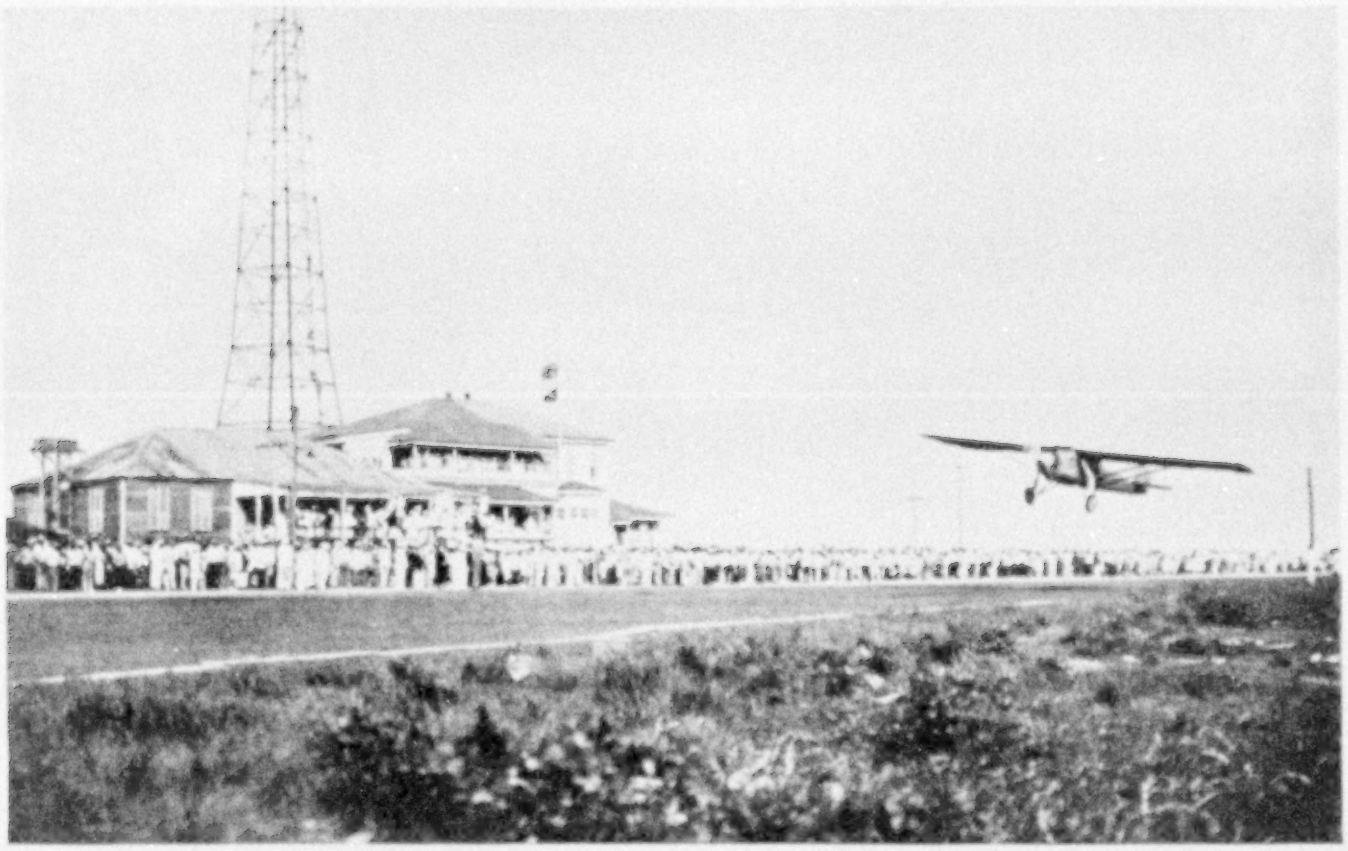
The airplane flies straight to its destination; the locomotive labors slowly along its serpentine way. This is a part of the railway line connecting Guatemala City with its Pacific seaport, San José (not the capital of Costa Rica). In the left foreground are some of the cultivated fields clinging to the verdure-clad hillsides, which attracted the attention of Colonel Lindbergh on his flight over Guatemala (see text, page 541).

groves, mango trees, orchids, and other tropical vegetation. On the way out we passed a lake in the crater of a dead volcano, which the natives believe to be bottomless and inhabited by a huge dragon.

FLYING LOW OVER THE JUNGLE, OBSERVING BIRDS AND ORCHIDS

I flew across Lake Nicaragua on my way to San José, the capital of Costa Rica. It was raining so hard by the time I reached the south shore of Lake Nicaragua that to keep within sight of the ground I had to fly at an altitude of 50 to 200 feet.

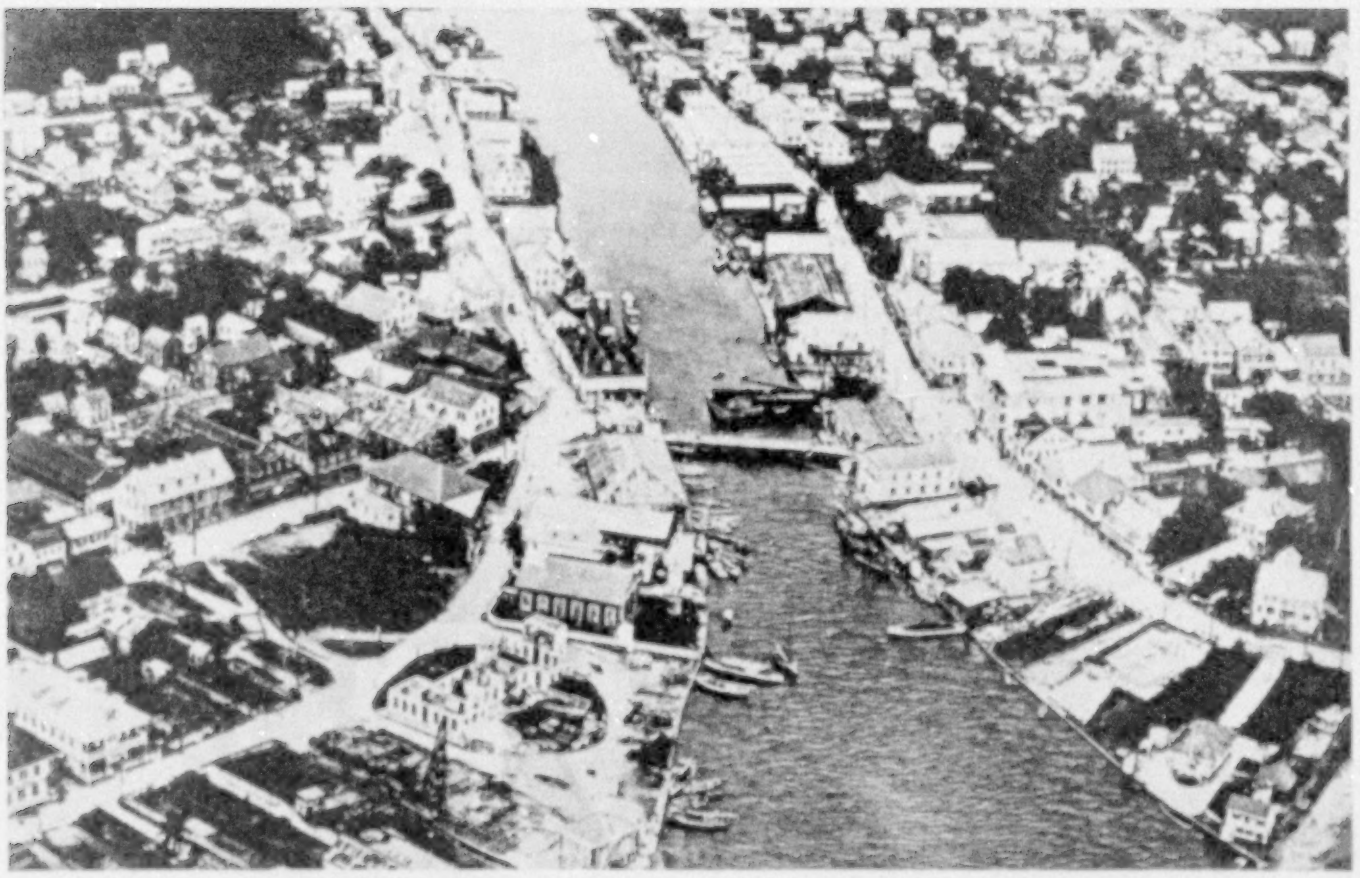
For the next 75 miles I flew over what seemed an impenetrable swamp. The rain clouds were so low that I had practically to skim the tree tops. I knew that, in case of necessity, I could climb up through



Photograph by V. M. Lizárraga

COLONEL LINDBERGH'S WAS THE FIRST LAND PLANE EVER TO VISIT BELIZE

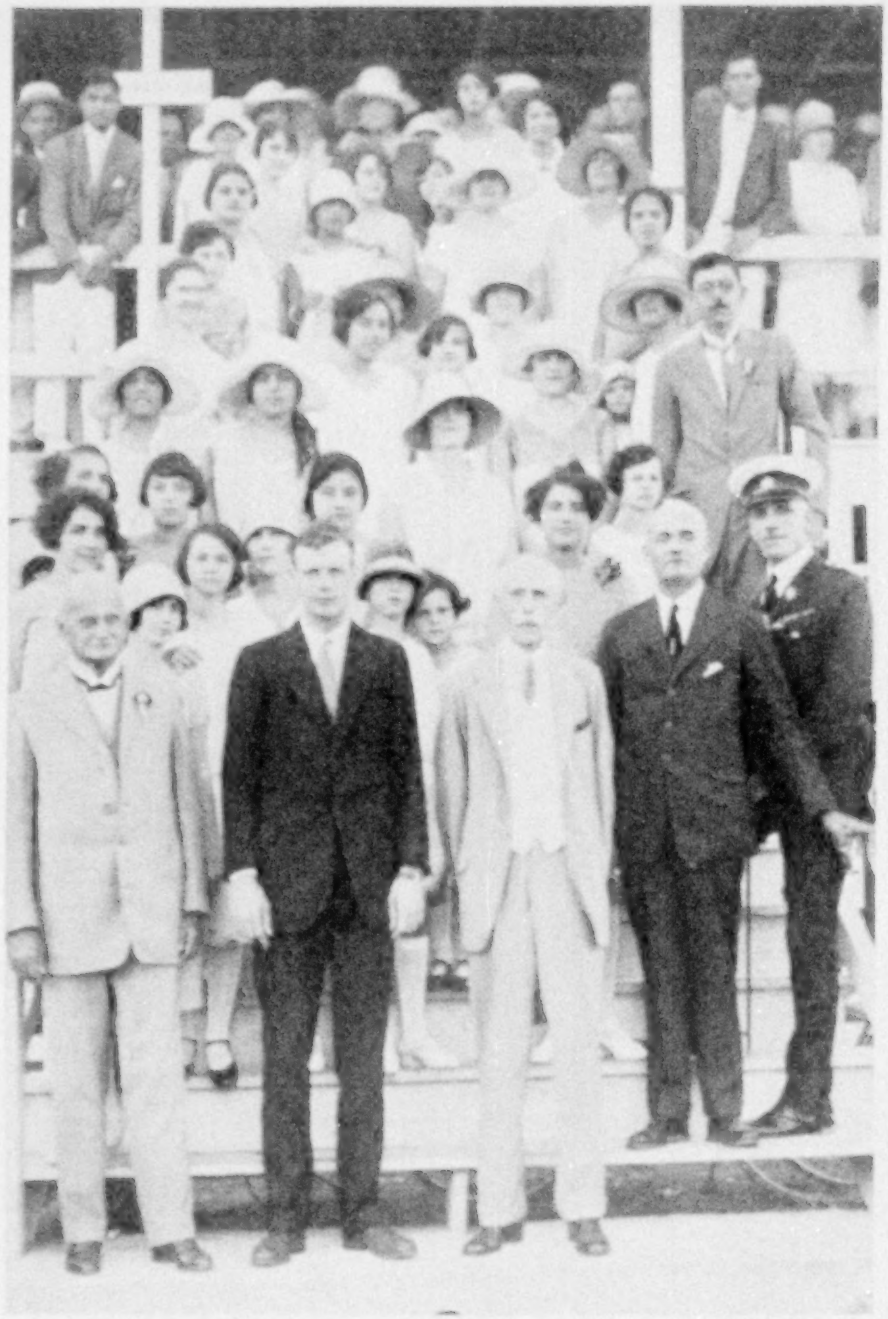
Behind the golf club building, with its flags flying, rises one of the steel towers of the British Honduras Government wireless station. Despite the narrowness of this improvised landing field, Colonel Lindbergh experienced no difficulty here, thanks in large measure to the excellence of the police discipline maintained (see text, page 546).



Photograph by Keystone

AN AËRIAL VIEW OF BELIZE

The city occupies both banks of the Belize River at its entrance into the Caribbean Sea. It is the capital and chief seaport of the Crown Colony of British Honduras, which is about the size of the State of Massachusetts.



Photograph by V. M. Lizárraga

AT THE NEWTON CLUB, IN BELIZE

A public holiday was declared in honor of the visit of the American aviator, and on his way from the golf club (see page 553) to Government House the streets of the city were lined with cheering throngs, practically the entire population of 13,000. The governor of the colony stands at the flyer's left.

Photograph by G. M. Sprattey

SAN MIGUEL CATHEDRAL AT TEGUCIGALPA

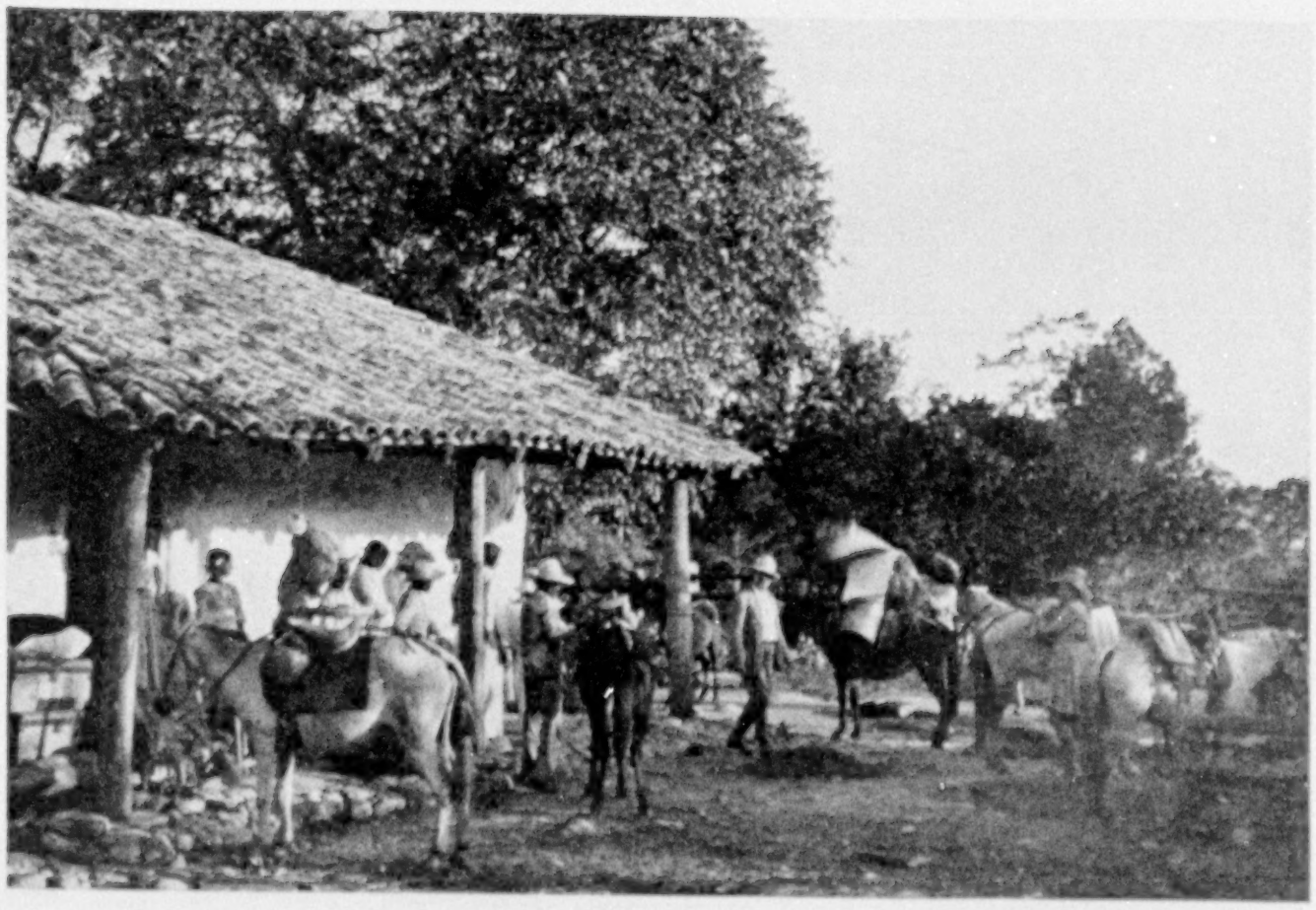
In the days of Spanish rule in Central America, it was every archbishop's ambition to build a cathedral. This burnt-brick edifice, partly Moorish in architecture, faces the plaza in Tegucigalpa and dates from 1782. Statues adorn its niches and the interior is embellished with old paintings.

IN SALVADOR, AS AROUND VESUVIUS, PEASANTS PUSH THEIR FIELDS FAR UP VOLCANIC SLOPES

As from the muzzle of some gigantic gun, red-hot rocks and deadly gas once belched from this huge hole. Then it quieted; the years cooled it. Slowly, through the centuries, forests crept up its scorched slopes. Then man, forgetting the lessons of ancient eruptions, followed the climbing tree-line, clearing his fields, building his winding road, like a bit of white string, even along the crater's rim.

Photograph by G. M. Sprattey

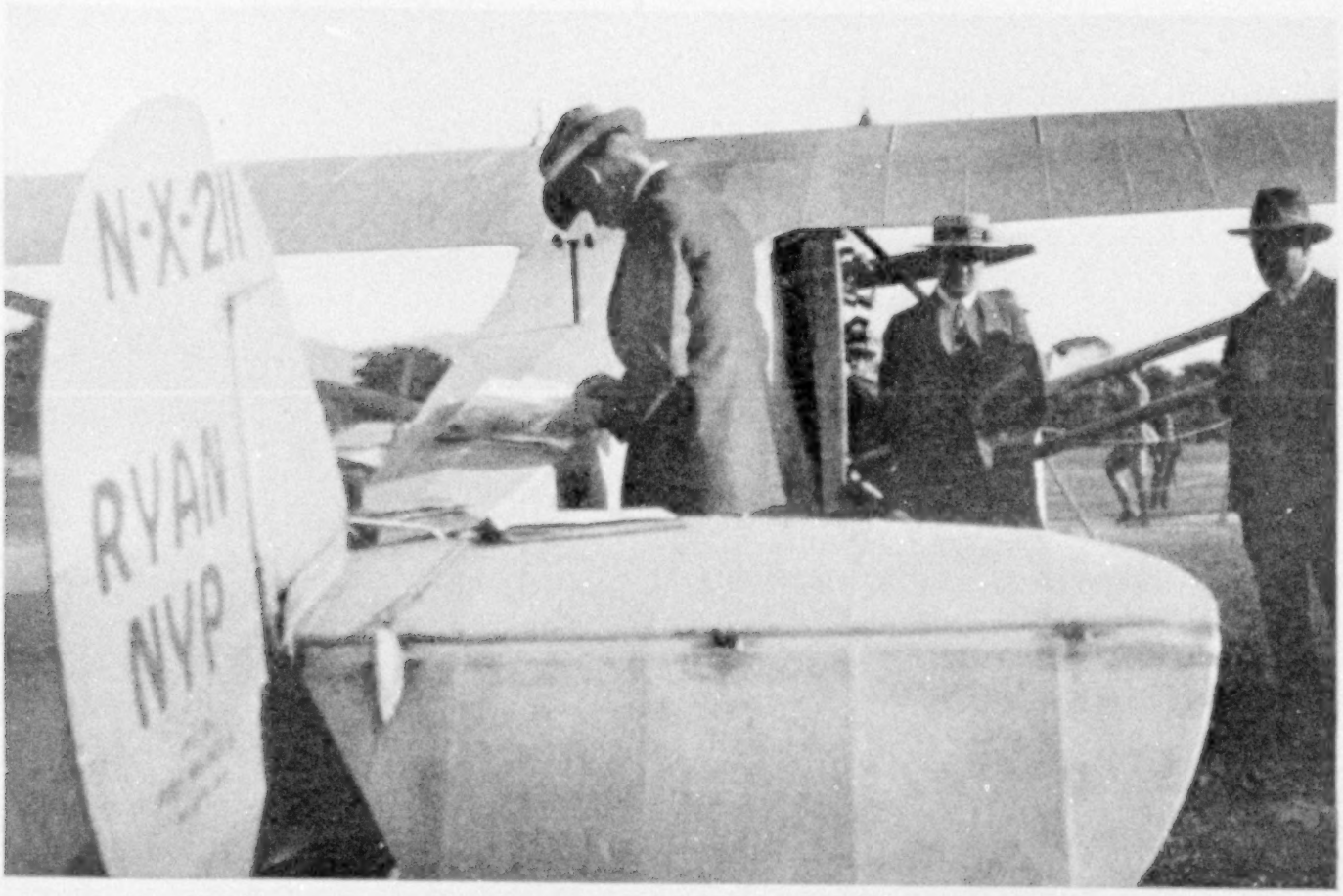
THE "CASA PRESIDENCIA," OR WHITE HOUSE OF HONDURAS, AT TEGUCIGALPA



Photograph by Frederick Krug

LODGING FOR MAN AND BEAST ON THE CROSS-COUNTRY TRAIL

There are no hotels off the beaten track in Honduras, so the traveler must spend the night in a native house. He is welcome to the best the family affords, but usually prefers to sling his own hammock rather than occupy the bed of stretched bull hide or canvas.

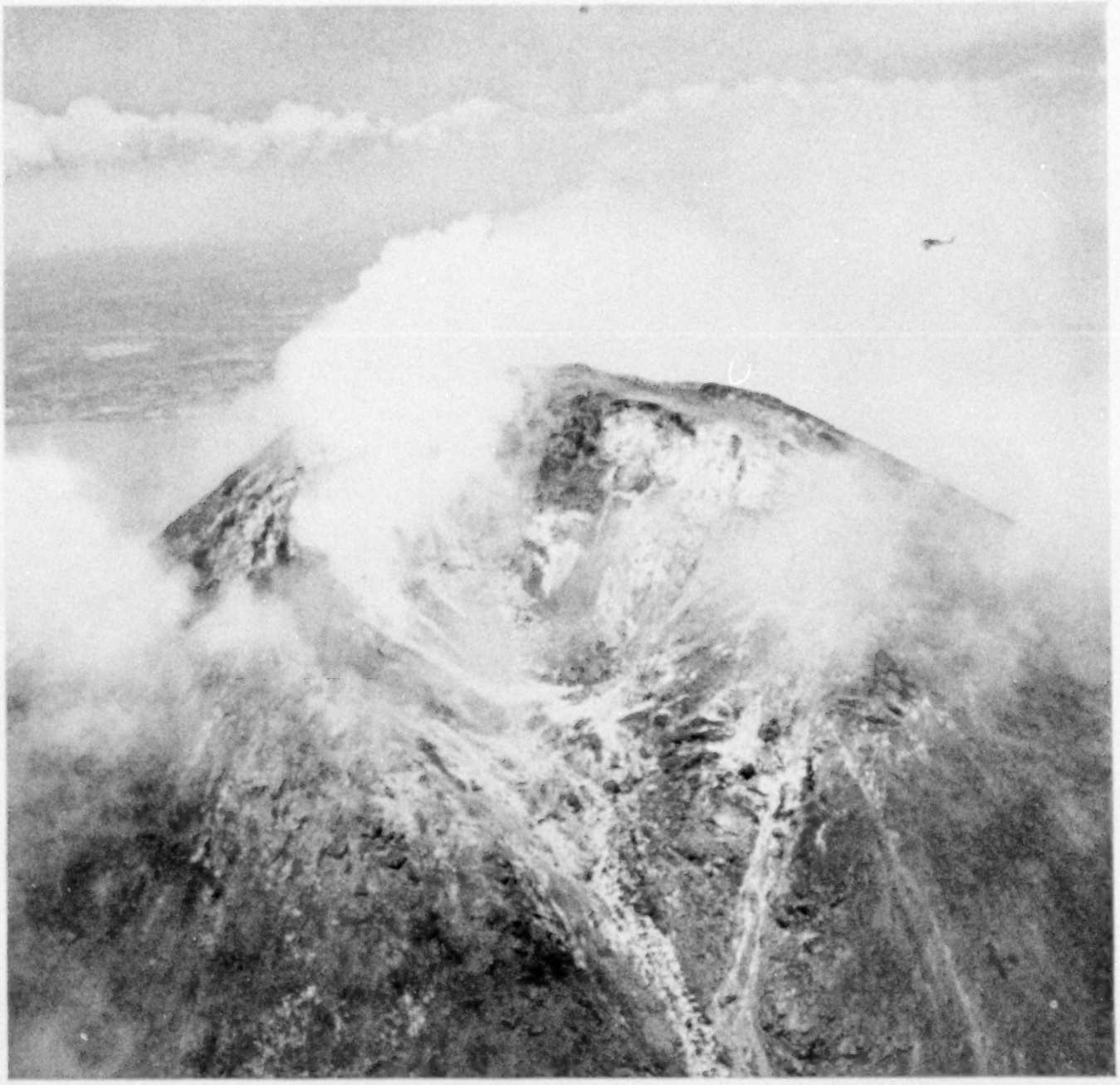


HAVING A LOOK AT HIS MAPS BEFORE TAKING OFF FROM SAN JOSÉ, COSTA RICA

Photographs by Gómez Miralles

PAINTING HIS COUNTRY'S FLAG ON THE "SPIRIT OF ST. LOUIS"

In accordance with the precedent established in France, Belgium, and England after the transatlantic flight of last spring, the fuselage of Colonel Lindbergh's airplane was appropriately decorated with the ensign of each of the Latin American countries which he visited.



MOMOTOMBO VOLCANO, A FIERY CARBUNCLE ON THE FACE OF MOTHER EARTH

In the upper right a plane is approaching Nicaragua's most famous volcano. In Central America these smoking landmarks are useful guides to aviators. Till planes were built, men could not see volcanoes whole.

the clouds and either fly back to clear weather or hold my course by instrument until reaching the mountains, which would probably be clear. In fact, I did not regret the low flying, for thus I obtained a good view of the jungle, including the palmetto, mango, and other types of tropical growth.

I was so close to the ground I could see orchids and air plants hanging in the trees. Then there were birds—scores of varieties of many and various colors. Some were bright green and very small. Bigger ones flew in flocks and I could distinctly see their bright plumage. The most striking of all were those of a brilliant red, yellow, and blue. They had red heads and breasts, with yellow rings on the front of their blue wings, and red tail feathers that streamed out a foot or two behind. Still others were large and black, with a white spot on their backs.

Any forced landing here would have been exceptionally dangerous—first, because at such a low altitude it would be practically impossible to choose a place to crash in; second, because the entire territory is a dense swamp of the type which would make progress on foot impossible.

At one place I passed a native dugout drawn up on the river bank; near a small banana plantation close to another river

AN AIR VIEW OF CORINTO, THROUGH WHICH MOST OF NICARAGUA'S TRADE PASSES

Standing on a breeze-cooled island at the mouth of Realejo Bay, on the Pacific coast, Corinto boasts the best harbor in the republic.

CENTRAL AMERICA BRISTLES WITH VOLCANOES, DEAD AND ALIVE

This is the crater of Coseguina, in Nicaragua, whose eruption in 1835 was one of the most terrible in history. In Belize, more than 300 miles away, troops were mustered, the rumbling of the distant volcano being mistaken for a naval action off the harbor.

AN EASY LESSON IN GEOGRAPHY, FROM THE AIR

Working on the ground, climbing hills and wading streams, it would take an engineer days to draw such a map; but, photographed from a passing plane, this comprehensive picture of a town on the Coco River, in Nicaragua, was but a few minutes' work.

I saw a small hut; but at no time, flying over this swamp, did I see a human being. After passing the second river I varied my course to the south.

IN COSTA RICA, ONE OF LATIN AMERICA'S MOST PROSPEROUS REPUBLICS

Now the country was getting higher. Small cultivated fields appeared and ahead were the mountains. I found a hole in the clouds and spiraled up to 7,000 feet. Crossing the mountains, I dropped down into a valley and found myself over the town of Alajuela. Fifteen miles away was the city of San José. There was such a crowd on the field that I dropped a note requesting that the people be moved back.

As I crossed the field, flying low, I could see the band in uniform playing on their instruments and the people waving their hats and flags. But the crowd was so bent on sticking close to the edge of the field that the police had to draw their sabers to hold them when I finally landed, after circling for twenty minutes.

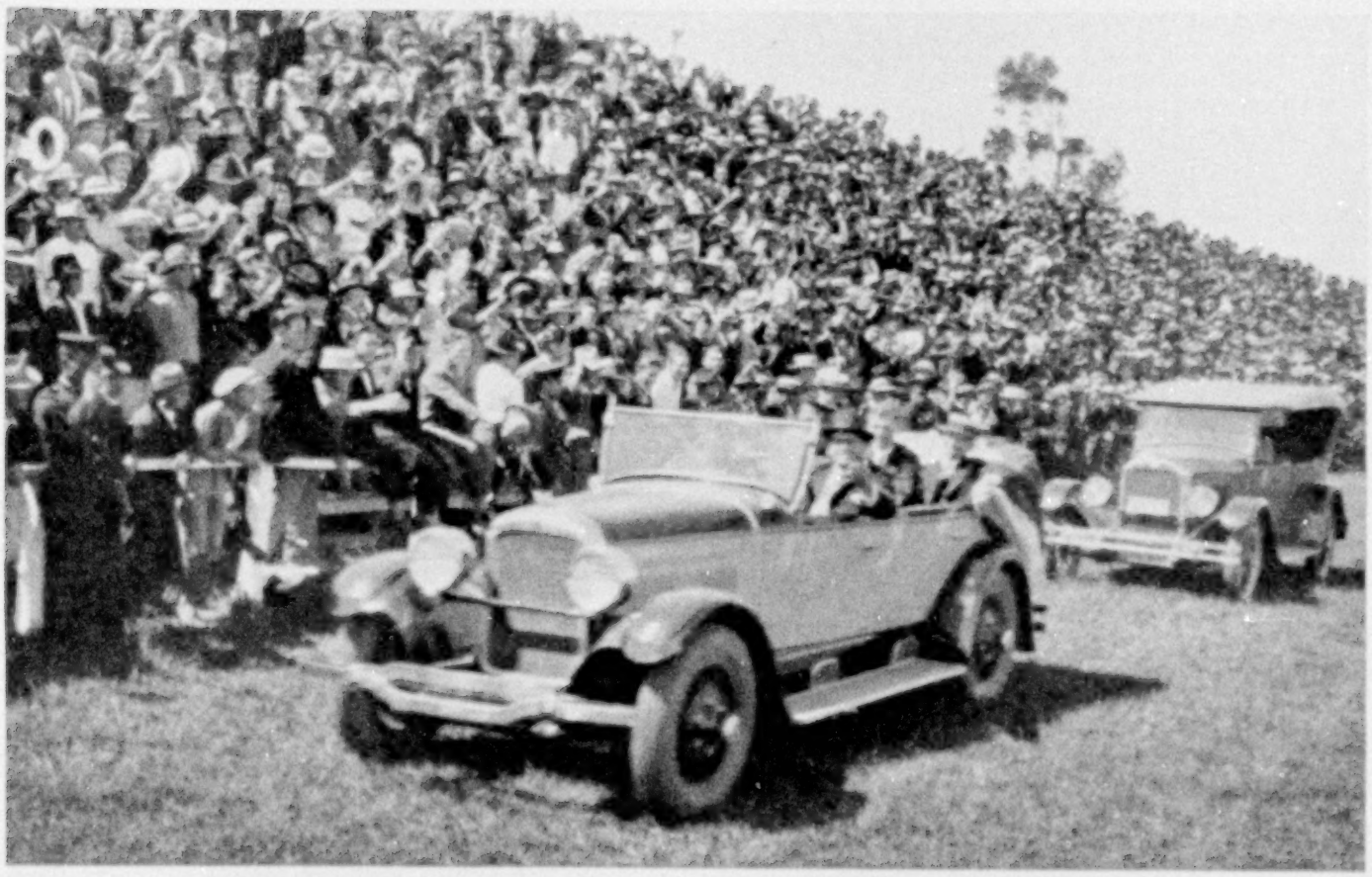
There were many Americans living in the beautiful city of San José. Costa Rica is one of the most prosperous republics in Latin America.

I found both natives and foreigners keenly interested in flying. Air commerce must become an important factor in their progress. My own flights, so far, indicate that aviation is peculiarly adapted to transport in Central America. Here railroads and highways are still so scarce that a trip which now takes days or weeks by land could be made in a few hours by plane.

In 1914 I had seen Panama, traveling many days by steamer from New York. I wanted to see it again. As I flew, I could not help but reflect how much of

DENSE CROWDS SWEEP OVER THE LANDING FIELD NEAR SAN JOSÉ

For greater safety to the populace and to his plane, Colonel Lindbergh dropped a note written on a chart, asking that the spectators be moved farther back. When the plane landed he cut the switches to stop the propeller, so that the enthusiastic citizens who rushed toward him might not be injured.



Photographs by Gómez Miralles

CITY AND COUNTRY CHEER THE FLYER FROM THE NORTH

Taking advantage of free train rides to the capital furnished by the Government on this occasion, Costa Ricans flocked from all parts of the countryside to the landing field at San José and took up their positions early on the morning of Colonel Lindbergh's arrival. The field, ordinarily a pasture ground and golf course (see page 562), had been smoothed and leveled.

Photograph by Gómez Miralles

"VIVA LINDBERGH!"

Surrounded by shouting thousands, the flyer's automobile moved slowly through the streets of San José to the American Legation, past welcome signs and bunting-bedecked buildings, and in a shower of confetti and spirals of roses from roofs and balconies.

Photograph by Gilbert Grosvenor

COSTA RICA'S CAPITAL IS SURROUNDED BY ACTIVE AND DEAD VOLCANOES

Due to its high elevation, much of Costa Rica enjoys a temperate climate. Its name, in Spanish, means "Rich Coast." While coffee and bananas are the republic's chief exports, dense forests of hardwoods are found on its Atlantic seaboard. Sugar, cacao, vanilla, sarsaparilla, rice, and cotton are also grown.

LAUGHING SCHOOLBOYS OF COSTA RICA

For more than 40 years education has been free and compulsory in this progressive republic. The result is observed in the people's standards of living. Education has brought not only a long period of peace, but able rulers, honest courts, sound land titles, and well-conducted public utilities.

Photographs by Gilbert Grosvenor

A BULLOCK TEAM ON THE STREETS OF SAN JOSÉ

More than a tenth of the population of Costa Rica resides in the capital city of San José, many of whose streets are macadamized and well lighted with electricity. With an excellent water supply and a temperate climate (being situated on a plateau 3,868 feet above sea level), it is one of the most attractive of Central American cities.

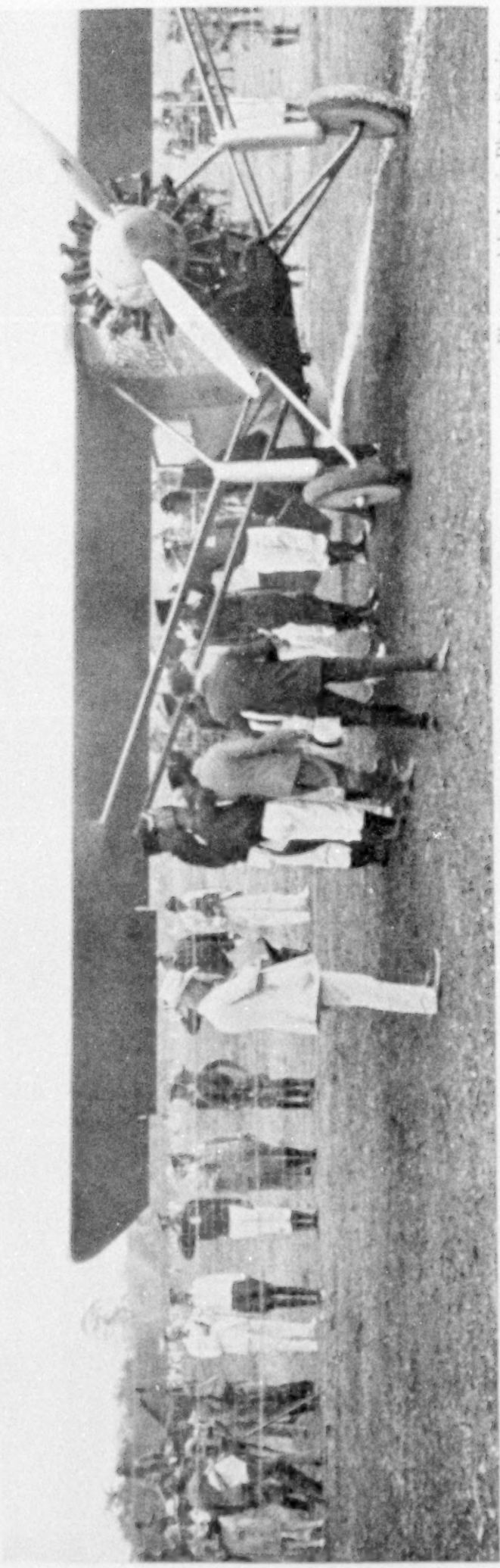
Photograph by Publishers' Photo Service

COFFEE GROWING IS COSTA RICA'S CHIEF INDUSTRY

After the berries are picked they are taken to the mill to be depulped, fermented, and washed. Then they are spread out on a cement floor to be dried and turned in the sun for a week. A yield of one pound per tree is considered good, though this is often exceeded. The Costa Rican industry is more than 100 years old, and the beans are famous in Europe, especially in England, for their quality and flavor. Other crops formerly grown in this progressive republic have been more or less neglected in recent years.

THE "SPIRIT OF ST. LOUIS" FLYING OVER FORT SAN LORENZO, IN THE CANAL ZONE

Once considered impregnable, this old Spanish fortification at the mouth of the Chagres yielded to the assaults of Sir Henry Morgan, the wily buccaneer, in the 17th century. After being rebuilt, it was bombarded by Admiral Vernon (after whom George Washington's brother named Mount Vernon—see Color Plate III) in 1740. During the gold rush to California it served both as fort and customhouse.



Photograph by Lewis Photo Service

PANAMA PHOTOGRAPHERS IN ACTION AT CAMPO LINDBERGH, PANAMA (SEE, ALSO, PAGE 568)

This flying field, on the outskirts of Panama City and outside the limits of the Canal Zone, was prepared especially for the American flyer and named in his honor.

time and distance have been wiped out by science and invention. Though on this flight I had covered over 4,000 miles since leaving Washington, my actual flying time had been about two days.

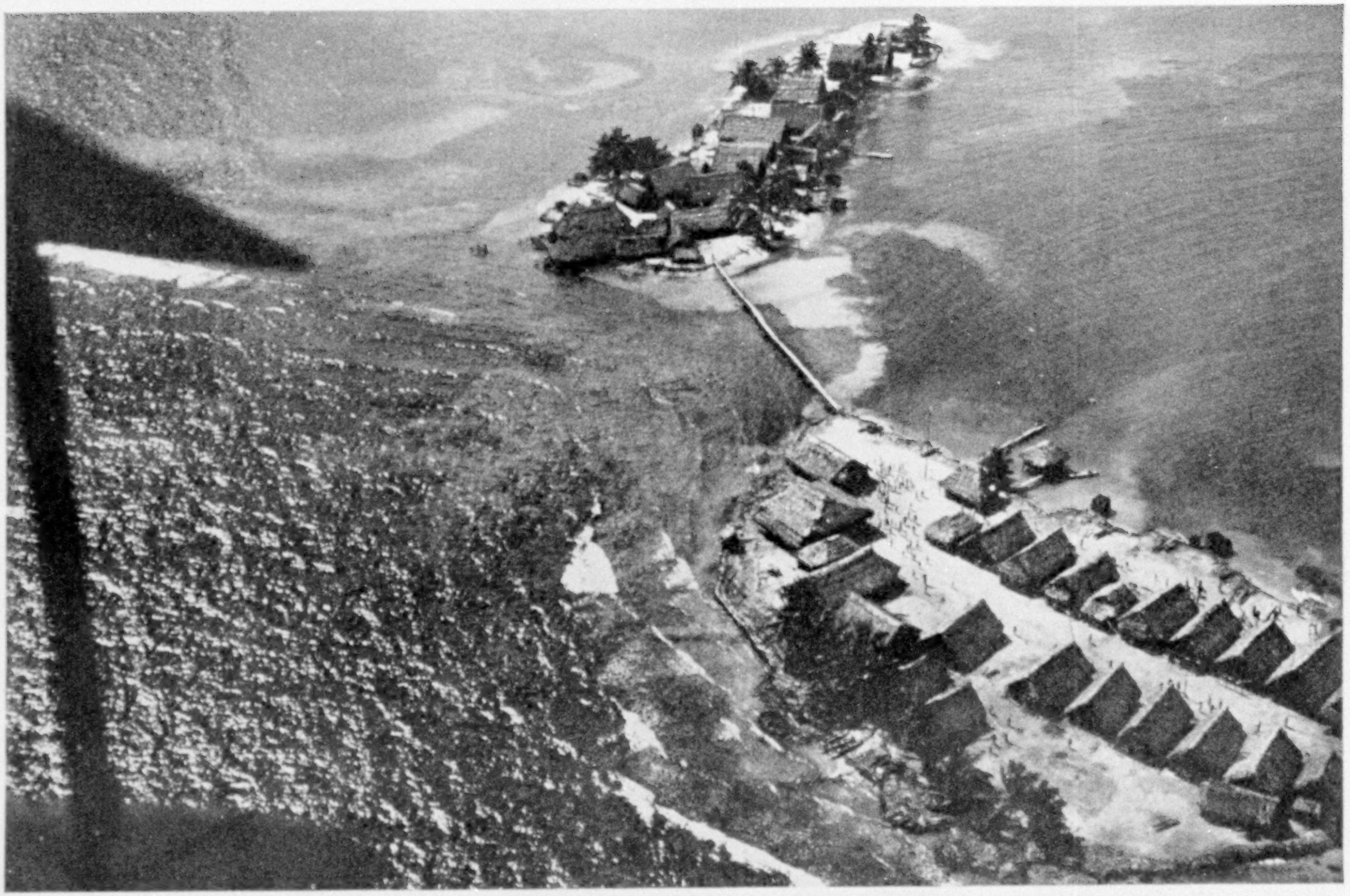
The country from San José to Panama is broken and wild, but there were several places where planes might land. I followed the valley of the Reventazón River and came to Almirante; then across Chiriqui Lagoon and Bocas del Toro. Striking the Atlantic coast at Mosquito Gulf, I followed the shore a few miles before striking across country toward Panama. Now huts and small plantations became more numerous. I passed between Gatun Lake and Chorrera. Off in the Bay of Panama I could see Taboga Island. Soon many of our Army and Navy planes came out to meet me from their base on the zone.

In the future, flights through Central America, like the one that brought me here, will make travel by air a common means of transport.

AIRPLANES AND AMERICAN HOSPITALS A BOON TO THE ILL AND INJURED

I was astonished during my visit here to find how many Panamanians speak English. Interesting as my trip through these countries has been, it would have been much more so had I known Spanish. I never realized before what a barrier the lack of a common language is to a mutual understanding between peoples. The people of the United States could afford to study more Spanish.

One of the greatest accomplishments Americans have made down here is in hospital work. Patients now come from all parts of Latin America for treatment in American hospitals on the Zone.



SAN BLAS INDIANS LIVE ON TINY ISLES LYING OFF THE ATLANTIC COAST OF PANAMA

Though smaller than a city block, some of these palm-fringed islets are literally crowded with the nipa shacks of Indians. From the air they seem to rise hardly high enough to escape inundation by the breakers, especially in rough weather. Fishing is the San Blas Indian's chief occupation. He also makes his own turtle spears and markets his turtle shell, or "plates," with foreign traders in Panama.

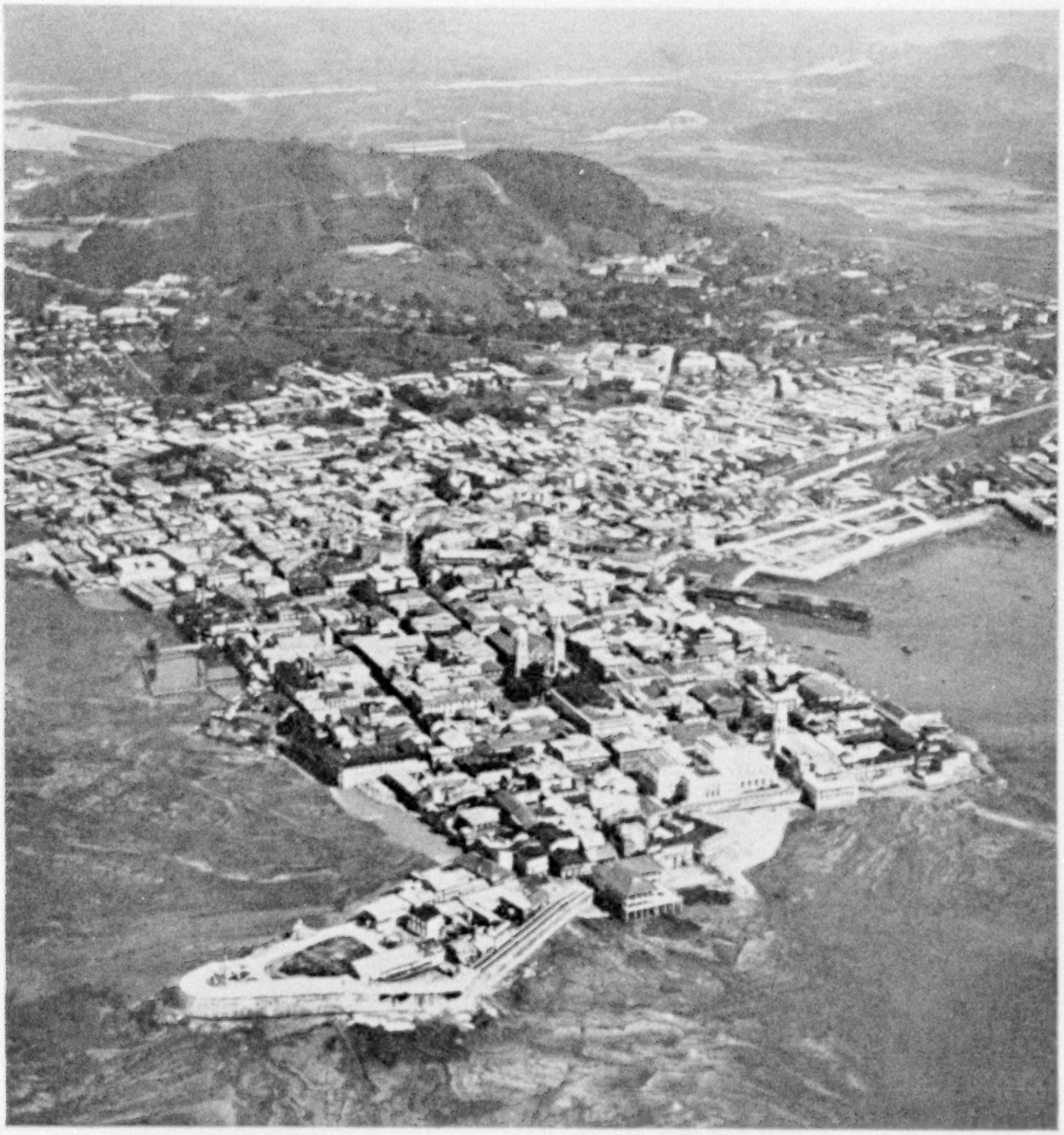
Photograph by Acme

THE FLYING AMBASSADOR ARRIVES IN PANAMA

History reveals here, on this Isthmus, one of those strategic world map-spots—like the valleys of the Rhine and the Tigris—where important things are always happening. Long, long ago, over this land bridge, a great civilization marched from Mexico to Peru. Pirates, in the days of discovery, used Panama as a base. Adventure and sublime achievement it has known, from Balboa to Goethals. What with pre-Aztec migrations, gold hunters from Pizarro to California forty-niners, French and American ditch-diggers, and now the rising tide of world tourist trade through its Canal, cosmoplastic Panama has played a singular rôle in Western civilization. . . . Lindbergh lands at Panama City.

Army aviators from France Field have brought sick and injured people to the hospital, in emergency cases, from remote parts of the interior by plane. Ambulance planes, amphibians, and bombers have been used for this work. Often these flyers carry nurses with the patient in the airplane, and sometimes a mother with her children.

When I last saw Panama, the great Culebra Cut was filled with steam shovels and dirt trains. They were carrying out the last excavated earth before breaking the dike that was to fill the Canal with water from the Río Chagres. Consequently it was interesting to fly over now and see this "Big Ditch," where last year more than 6,000 commercial vessels passed from one ocean to another. As I looked down on the boats using the Canal, and on the many little green islands in the artificial lake—islands that were once the tops of hills—I could not help thinking how much an air-mail service would bene-



PROSPEROUS PANAMA CITY, NEAR THE PACIFIC END OF THE CANAL

Every newcomer gets the points of the compass twisted in Panama. The sun appears to rise in the wrong place. Balboa, misled because the Isthmus runs east and west, named the Pacific the Great South Sea. Panama City itself, though on the Pacific coast, is south and east of Colón, the Atlantic entrance of the Canal.

fit this great volume of shipping. Any speeding up of communications is of help to the transport business.

GEOGRAPHIC PARADOXES AT PANAMA ARE SIMPLIFIED BY AN AIR VIEW

After resting and hunting a few days, I took off from France Field and laid a course for Cartagena, in Colombia. Several planes from France Field, at Colón, escorted me on the first part of my journey.

We commonly think of the Atlantic as being east of the Americas and the Pacific as being west, but because of the kinks in the narrow Isthmus and the directions in which it twists, one may get the impression that the sun rises in the west and sinks in the east. When you get up in the air, however, and look down on the map of the Isthmus and the Canal, and on the two oceans at once—if the day happens to be clear—then the geographic paradox is plain enough.

AN AËRIAL VIEW OF PORTO BELLO, BURIAL PLACE OF SIR FRANCIS DRAKE

The name of Drake, son of a clergyman, lives in the lore of Panama as one of the boldest sea kings of all time. When seas yielded no prize he led his crews ashore. From one Panama mule train tradition says he took thirty tons of gold and silver. His amazing success as a freebooter led Queen Elizabeth to grant him letters of marque to prey on Spanish ships. He sailed around the world, winning knighthood for the achievement, and in 1596 died aboard ship and was buried at sea, a league offshore from Porto Bello, which is only 20 miles from Colón.

For the first few miles I flew over thick jungle; then the Pacific coast appeared, and I passed over open savannas. The coast here was only a few miles off my plotted course, and I deviated enough to follow it for a short distance. The Pacific tide is very high along the Panama coast, and at low tide a broad belt of mud flats appears between the high- and low-water mark.

Pelicans and other water birds by the thousands covered these mud flats. Now and then a grass hut appeared on the shore line. There were numerous dugouts and small sailboats, some of the latter often several miles out at sea.

Flying low over jungle streams, I saw dozens of alligators sunning themselves on the mud banks.

FROM THE AIR A JUNGLE RESEMBLES A VAST GREEN SPONGE

Far to the southeast of Panama City I left the coast and headed over the interior toward Cartagena, on the Atlantic side. This country was wild and almost uninhabited.

Before sighting the Caribbean Sea I

HERE MORGAN, THE BUCCANEER, DESTROYED THE OLD CITY OF PANAMA

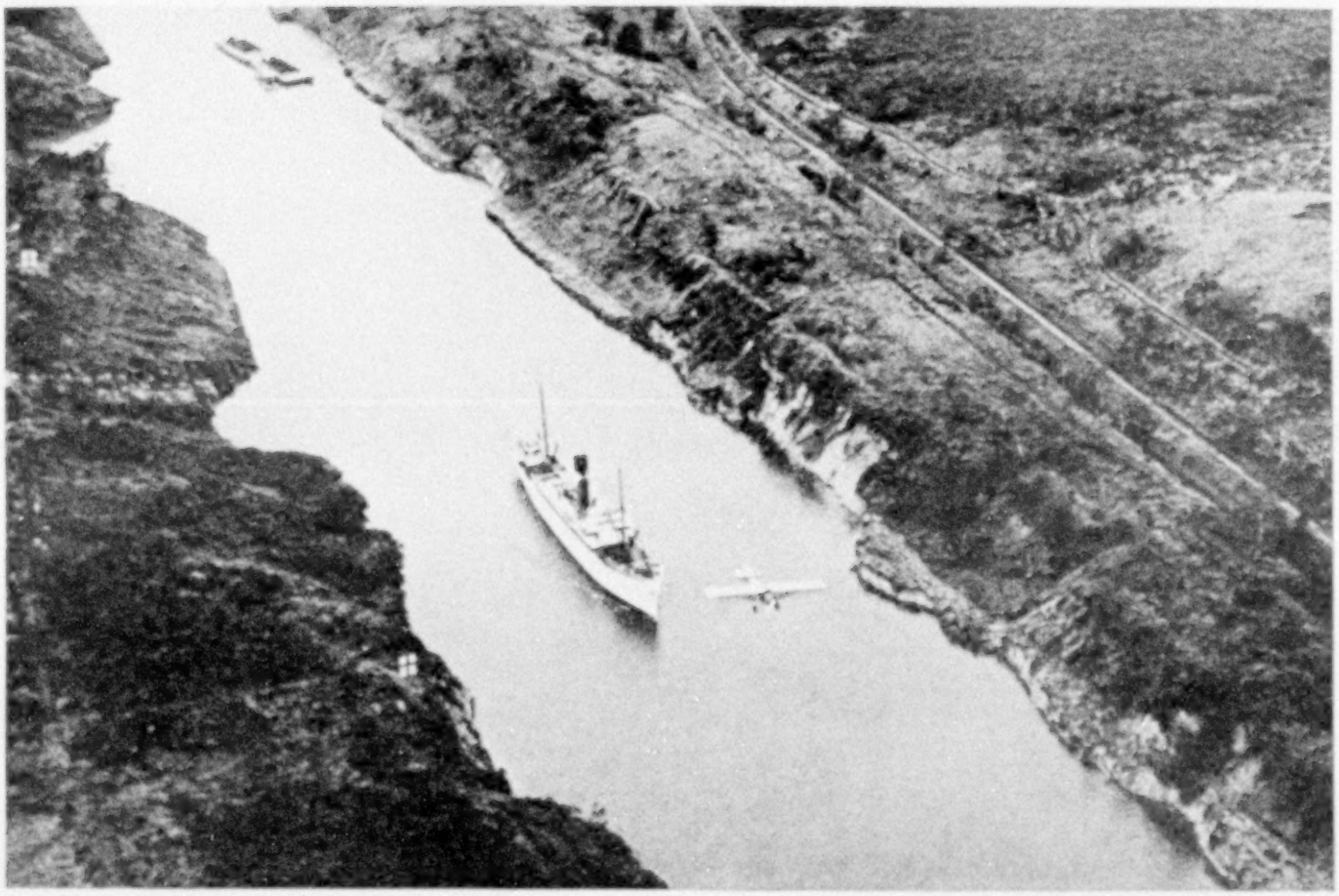
The daring freebooter and his band sacked and burned Panama City in January, 1671. It took 175 pack animals, wrote Esquemeling, to carry the gold, silver, and other loot. To-day an excellent motor highway follows the path where once Spanish pack mules floundered through mud and weeds.

flew over a cloud-covered range of mountains—often within a few hundred feet of the peaks and the mountain sides.

Down here, near the Equator, mountains are quite different from those in the United States. Usually even the highest here are completely covered with heavy dark-green growth. Now and then a miniature river appears from nowhere, dashes out over a precipice to fall in a curtain of mist, to disappear again in the jungle several hundred feet below. It is easy to fly over a jungle river without seeing it. High trees grow by the banks and branch out over the water until their boughs interlock over midstream a hundred feet above the water.

Orchids and air plants, together with numerous vines, hanging down like ropes from the tree tops, help to cover the ground and water below. Flying over very dense jungle, you seldom see the ground at all—nothing but a solid green mat of tree tops that look from above like a vast green sponge or an endless field of velvety moss.

I found the Caribbean coast rugged and dotted with small isles. Flying over the north end of Urabá Gulf, I set a compass course across the thirty miles of salt water



THE AMERICAN AVIATOR, PILOTING HIS "SPIRIT OF ST. LOUIS," FLIES OVER A SHIP PASSING THROUGH THE PANAMA CANAL

Photograph by Pacific and Atlantic

THE "LONE EAGLE" NEARS COLÓN, PANAMA

Seventy-odd years ago a swampy islet of mud and jungle became a town to serve as an Atlantic terminus for the Panama Railway. Now it is a modern city worthy of being an Isthmus gateway, for gone are the days when it was a tropical death trap and laborers had to live on ships to escape the unbearable horrors of the swamp.

THE SINGLE-SEATER WINGS ITS WAY OVER GATUN LAKE: PANAMA CANAL ZONE

On his flight to Colón, Colonel Lindbergh made an aërial inspection of this artificial lake, which was created by the closing of Gatun Dam across the Chagres River and the subsequent overflow of 165 miles of lowland. The lake is dotted with the tops of trees killed by the overflow and with green islands which were once the summits of high hills. One of these islands, Barro Colorado, has been set aside by the United States Government as a sanctuary for the conservation and study of tropical life (see "Who Treads Our Trails?" in the NATIONAL GEOGRAPHIC MAGAZINE for September, 1927).

to the Colombian shore. I wrote my notes in the air, on the margin of my map.

Some 1,800 feet up I cruised along the coast of the Gulf of Darien. Below appeared many small villages, along the shore. Inland the country was hilly, but not mountainous. In fact, from here I could see no mountains at all, perhaps because haze cut visibility to about 40 miles. Along the gulf coast I made about 95 miles an hour, against a head wind, and reached Cartagena at 1:45, on January 26.

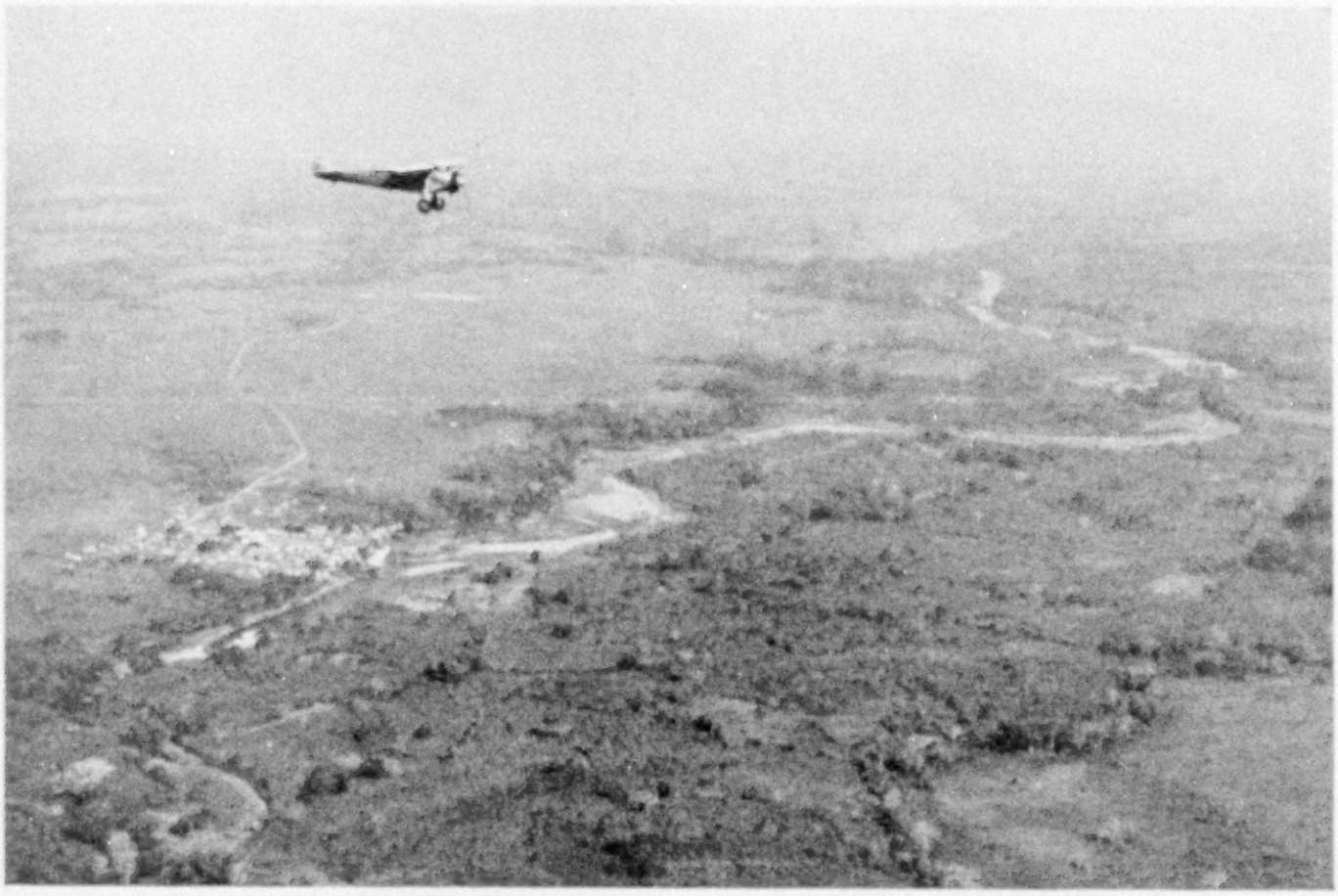
FIVE HOURS FROM CARTAGENA TO BOGOTÁ

On the 27th I left for Bogotá, which lies almost due south of Cartagena, in the interior of Colombia. It used to be considered one of the most inaccessible Latin American cities. Now its people get in and out by air, in a mere fraction of the time required by other means. It took me a little over five hours to fly there from Cartagena.

For the first hundred miles the country I flew over was inhabited and contained many places where I could have landed had it been necessary, but after leaving the San Jorge River I struck a rugged country, covered with very dense jungle. The color of the trees here was different from any I had seen. Some bore red flowers and stood out sharply in contrast with the dark green of the jungle. Here and there was one of a brilliant yellow color.

About a third of the way to Bogotá I located myself above the forks of the Nechi and Cauca rivers. Soon after noon I passed over Puerto Berrío. From 2,000 feet up I looked down on many people in the streets. There were river steamers in sight, and at the river bank there was one of the airplanes used by the German company that runs a commercial service from Bogotá down the Magdalena River.

I was flying at about 8,000 feet and was



ALONG THE LONELY HIGHWAYS OF THE SKY: OVER CHEPO, PANAMA

As the careening caravels of Columbus dared uncharted seas, so this silver-winged sky-schooner, with a lone man aboard, droned through empty cloud worlds—from the Potomac to the Magdalena.

Photograph by Foto-Cartagena

THE "SPIRIT OF ST. LOUIS" REACHES COLOMBIA

Excited spectators, running pell-mell onto the landing fields, constantly caused deep anxiety to the aviator. Colonel Lindbergh landed at Cartagena 15 minutes ahead of schedule after his long flight over jungle, mountain, and sea from Panama (see text, page 573).

Photograph by Foto-Cartagena

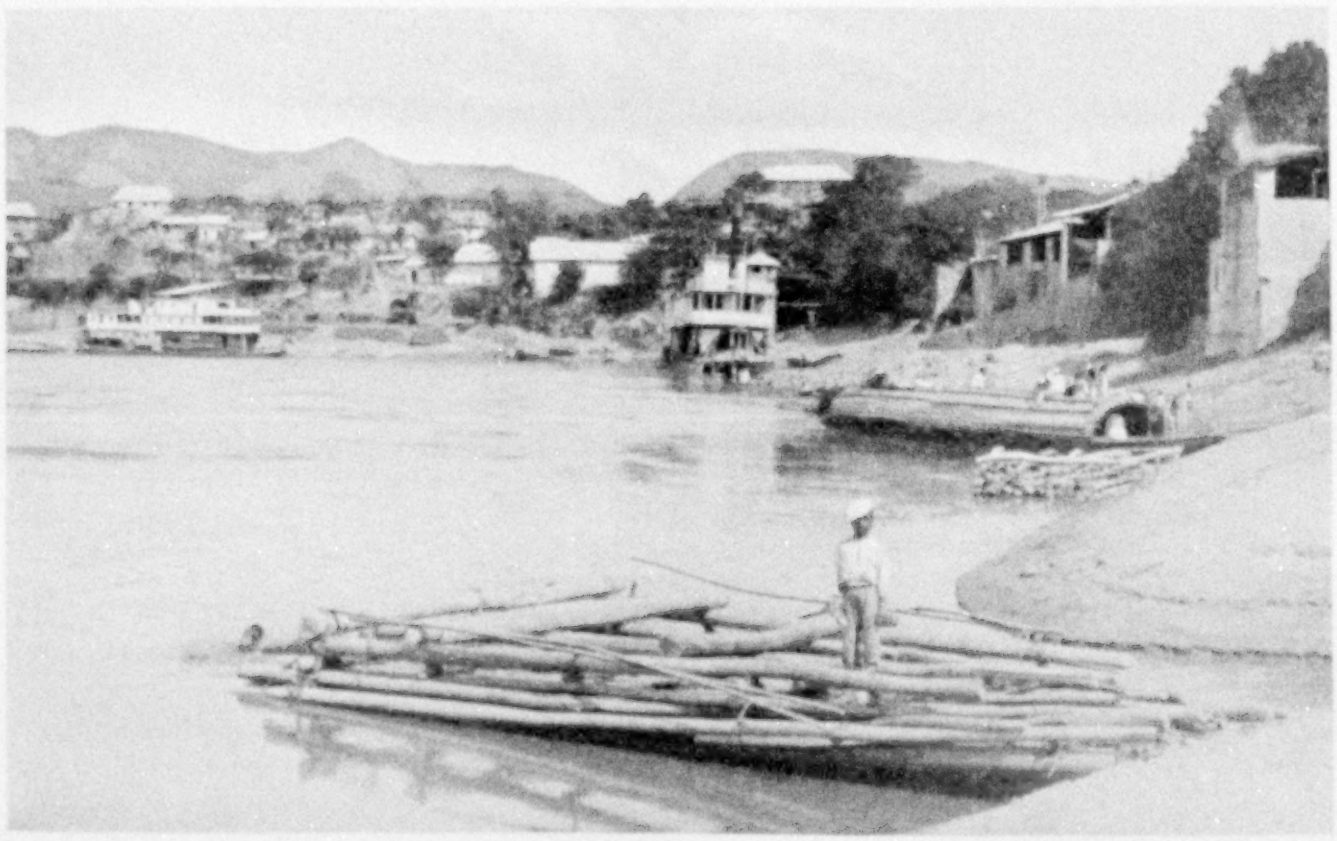
THE CHIEF GATE TO CARTAGENA, FOUR CENTURIES OLD

Bold Spaniards, in quest of treasure, landed and built fortified towns like Cartagena, in Central and northern South America, nearly a century before English colonists settled in Virginia and Massachusetts. The products of Hollywood and Detroit are much in evidence here.

Photograph by W. Robert Moore

THE WATERFRONT AT CARTAGENA, COLOMBIA

Judging by its strategic place on the map, this ancient city of stone walls, forts, and forgotten dungeons, once Spain's great stronghold in the Western World, may assume new importance when air lines run from North to South America along the Caribbean littoral.



Photograph by Wilson Popenoe

THE WATERFRONT AT GIRARDOT, INLAND RIVER PORT FOR BOGOTÁ

The Magdalena, flowing almost due north, is navigable for hundreds of miles through the Republic of Colombia. Going to Bogotá by the side-wheel steamers that ply this long, winding stream, one starts from Barranquilla, on the Caribbean coast. Over this route a regular sea-plane service now passes, making the trip in a few hours (see page 577).

© Scadta

AN AIR VIEW OF THE JUNGLES OF THE UPPER TARRA RIVER: COLOMBIA

Like the winding trails of legendary dragons, jungle rivers twist among endless tropical swamps, often affording the only easy means of travel through the vine-bound undergrowth. A man wading along the margins of such a jungle river, or navigating it by canoe, knows from its curves that it is crooked, but only the aviator can really grasp its league-long loops.

Photograph by Wilson Popenoe

A MARKET IN BOGOTÁ, SOUTHERNMOST CITY REACHED BY THE AMERICAN FLYER

Although planes have rescued it from age-old isolation, Bogotá's working habits are little affected. As in early days, life is still most active around the markets. Each section handles its own class of products. In the foreground are the plantain venders selling a banana that must be baked or boiled; beyond are mats, baskets, and bird cages made of reeds.

© Scadta

LONG-DISTANCE AIR LINES PAY WHEN NO RAILWAYS COMPETE

From Barranquilla to Bogotá, along the Magdalena River, in Colombia, Germans operate an air commerce line. Before these planes came, Bogotá people often took many days to reach the sea by river steamer (see text, pages 573 and 578). These are the hangars of the Magdalena air line at Barranquilla.

Photograph by George M. Dyott

A YOUNG PECCARY BECOMES A PET

While flying over the extensive grassy plains of Colombia and Venezuela, Colonel Lindbergh observed what he at first thought to be herds of pigs, but which proved to be peccaries, New World relatives of the swine. They are found throughout Mexico, Central and South America, and as far south as Patagonia.

some 60 miles from Bogotá when I found clouds covering the mountains. I had to detour to find an opening, and finally got through the mountains at 9,800 feet.

The Bogotá airport is out at Madrid Field. I passed over it about 2 o'clock, but went on and circled around the city of Bogotá several times, and then came back before landing at Madrid Field at 3 o'clock.

Considering its size and isolation, Bogotá is far more air-minded than many larger cities in America. I understand German commercial planes that serve Bogotá are sometimes booked up weeks ahead. The people with money to fly gladly forsake tedious travel by mule, motor, and river boat for the quick, comfortable voyage by air.

It is 665 miles on an air line from Bogotá to Caracas. The sky was clear when I took off, at 6:48 a. m., on January 29, and headed straight for Caracas.

FLYING 50 FEET OVER THE FAMOUS LLANOS

By the end of the second hour it had become quite cloudy. Finally I had to reverse my course. Though flying at 10,500 feet, I was unable to get over the mountains.

After spiraling for about twenty minutes, I crossed over the ridge between the clouds at 12,000 feet. At this point the mountainous country ended and I passed out over a clear, high region. Detouring once to avoid a local storm, I came finally over the open plains, or llanos, where I could have landed anywhere.

These great plains, about 1,000 feet above sea level, were covered, as far as I could see, with scattered cattle. I flew low, often only 50 feet from the ground. Besides the cattle, I saw near the lakes and streams what I first thought to be herds of pigs; yet they didn't look exactly like pigs; there was something peculiar about them. I circled and passed about 10 feet over one of the herds. Frightened, they dashed into the water and swam across. They turned out to be peccaries. Turning back on to my course, I passed

Photograph by Thomas F. Lee

WITH HIS STICK-PLOW AND BULLS, HE FARMS AMONG THE CLOUDS, ALMOST 10,000 FEET ABOVE THE SEA

Venezuela is a land of amazing latent wealth. From its rich oil fields and its mines to its vast agricultural valleys and stock-raising highlands, it is capable of great economic growth.

over two antelope. Thereafter, for 200 or 300 miles along my course, as far as I could see, antelope, peccaries, and cattle were scattered over the llanos.

Besides herds of peccaries and groups of a dozen or more antelope, there were birds, larger and different from others I had seen in the Tropics. Some were brilliant red; some of the larger ones were pinkish—probably flamingos.

RACING WITH THE SUN FOR THE MARACAY FLYING FIELD

For 400 miles after leaving the mountains and striking this great open grassy plain, there were no landmarks by which I could check my position. Then mountains began to appear indistinctly on the horizon to my left—the Cordillera of Mérida.

Ahead loomed the cloud-covered lower mountains around Caracas, which I had to cross to get to the city. These clouds were so thick I could not get through. I followed around the south side of the range for over two hours, hunting an opening before I was able to reach the sea.

I located position as about 150 miles east of Caracas. It was then about 4 p. m. The sun was due to set at 6. There might be fog on the mountains surrounding the city; consequently it was necessary to make the best possible time. If I was not able to get through to the field at Maracay, there would be only a few minutes to hunt for an emergency field before sunset.

With a wide-open throttle I flew the distance in order to arrive before dark. As I neared Caracas the coast grew rougher and the sand beach disappeared. The railroad from La Guaira to Caracas was covered with fog. I kept on along the coast for several miles, then backtracked to Caracas through an open valley and landed at Maracay a few minutes before sunset.

The greater part of my route from Bogotá to Caracas was over country where air lines might easily operate, with plenty of excellent places for planes to land.

Photograph by Thomas F. Lee

A SECTION OF THE MARKET PLACE IN CARACAS

The steps at the right are covered with long strings of garlic, bundles of onions, and other vegetables. The mules and burros patiently await the sale of the burden that they carried in to market in the early morning, so that they may carry their masters back to their little mountain *fincas* in the evening.

From the landing field I drove by motor over a good cement road to Caracas. The road wound about the mountains for some 70 miles. The actual distance between the two cities is hardly more than half of that.

This was my last stop on the mainland of South America. No people could have treated a stranger more handsomely. From Mexico City to Caracas I met with nothing but kindness, boundless hospitality, and enthusiastic public interest in my flight.

At Caracas I had the honor of laying a wreath on the tomb of that great liberator, Simón Bolivar, in the National Pantheon.

GOOD-BYE TO SOUTH AMERICA

It was 6 o'clock on the last day of January, 1928, when I took the air from Caracas and said good-bye to the South American Continent. Before me stretched my thousand-mile flight—a big half-circle swing over the Lesser Antilles to St. Thomas, in the Virgin group. To get there before dark, I had to fly at high cruising speed, since a head wind was blowing.

Over Cape Tres Puntas I took up a compass course for the island of Grenada. In ten minutes the coast of South America disappeared from view in the haze. I flew over three small sailboats and then ran into a rain squall. In about an hour Grenada appeared indistinctly on the sky line. Thereafter, for 400 miles, an island of some kind was always in sight (p. 582).

On almost every island which had any vegetation, there were signs of human life. Some of them were thickly populated.

From Saba Island I steered straight across 120 miles of water for St. Thomas. Altering my course a bit when I saw a big steamer, I glided low down directly over her. She was the *Amsterdam*. Thirty miles away the Virgin Islands lifted their green heads from the blue water, and I landed at St. Thomas. It was then 4:50 p. m., 60th meridian time, which is 30 minutes ahead of Maracay time. I had made the flight in ten hours and fifteen minutes.

It's only 80 miles from St. Thomas to San Juan, Porto Rico; but, at the request of the Governor of the Virgin Islands, I flew over St. Croix on the way to Porto Rico. It was 11:45 in the morning when I left St. Thomas and passed over two small islands in the West Indies on my way to the town of Christiansted, on the Island of St. Croix. This hop took only thirty minutes. Travel between these small islands by boat is often slow, uncomfortable, and at times uncertain; yet by air they are only a few minutes apart.

Around the islands the water is so clear that I could see many fathoms down into it, when flying low. There were numerous reefs in some places, while only a short distance away, according to my chart, the depth increased to hundreds of fathoms. Between the islands there were many fishing boats. The West Indies offer some of the best fishing in the world.

After circling Christiansted I flew over the middle of St. Croix Island to Frederiksted; thence to the Island of Vieques and over Porto Rico to San Juan, landing shortly before 2 o'clock in the afternoon.

Photograph by Wide World

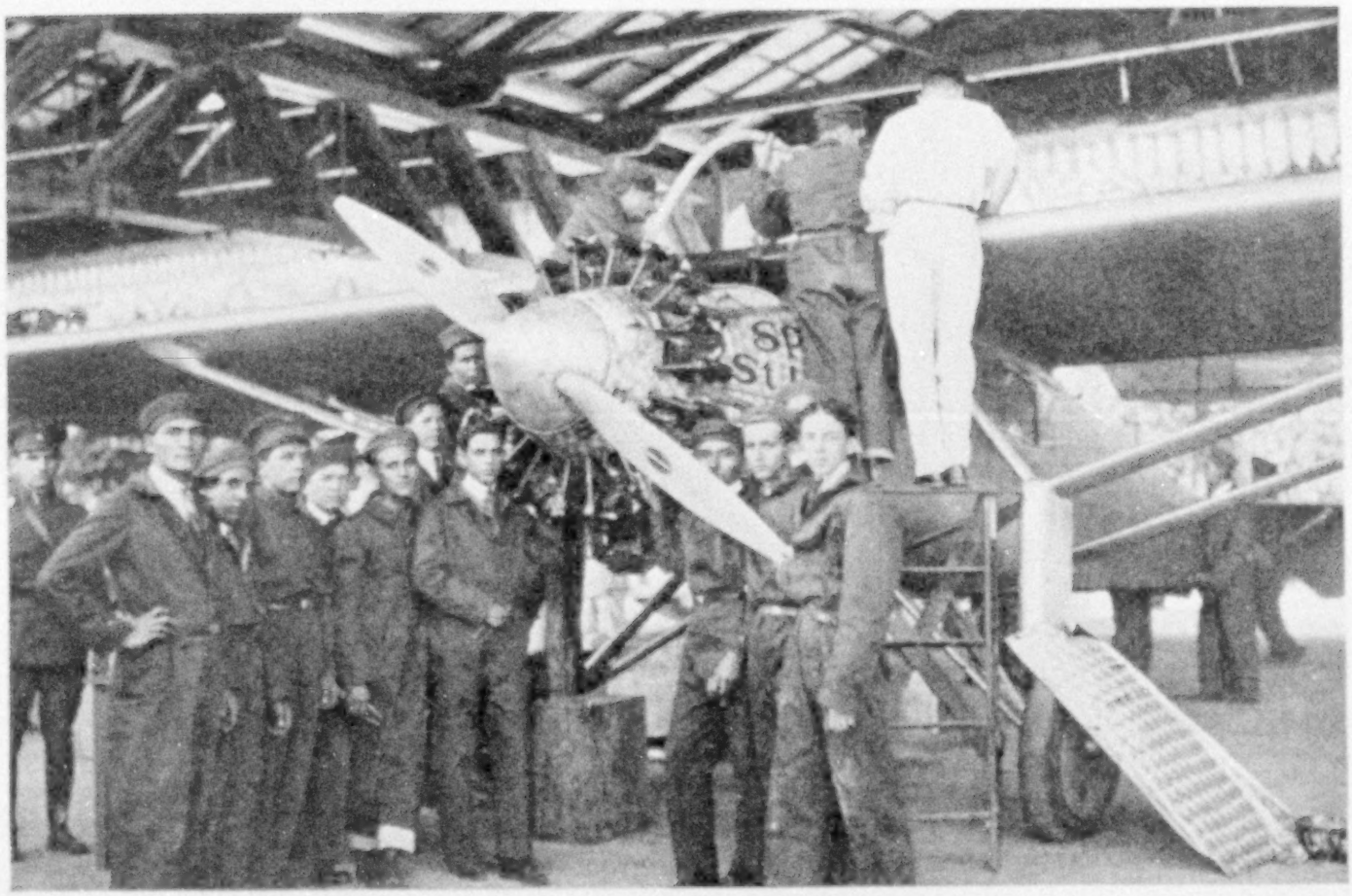
AMONG ALL GREAT NAMES IN SOUTH AMERICAN HISTORY, NONE IS ABOVE THAT OF SIMÓN BOLÍVAR

With officials of the Venezuelan Government, the American flyer visited the beautiful tomb of the Liberator, which stands in the National Pantheon at Caracas. Upon it he placed a wreath with a ribbon bearing the legend, "From Colonel Charles Lindbergh to the memory of General Simón Bolivar."

My flight over these islands impressed me with the facility with which an air line could be established connecting North and South America. They are so close together that on a fairly clear day one of them is always visible from another, even from low altitude. The longest water gap would be only a little over 100 miles. In fact, I believe that even short routes between the islands themselves might be profitable.

ADVANTAGES OF AIR LINES IN THE WEST INDIES

In the United States our air lines must, of course, compete with highly developed rail transport. When a plane loses a few hours, due to fog, the railroad is superior. But down in the West Indies conditions are different. Even if a plane lost a day or two, it would still have an advantage over ground and water travel. I believe



Photograph by A. Muller-Marty

TAKING FUEL AT MARACAY, VENEZUELA, FOR THE SEA HOP TO THE VIRGIN ISLES

Embarking on his longest flight since he landed at Mexico City, Colonel Lindbergh took on a heavy load of gasoline. He made an early-morning start, for he anticipated a struggle with head winds, and was anxious to cover the more than 1,000 miles to St. Thomas in 12 hours and land before darkness set in.

Photograph by Gilbert Grosvenor

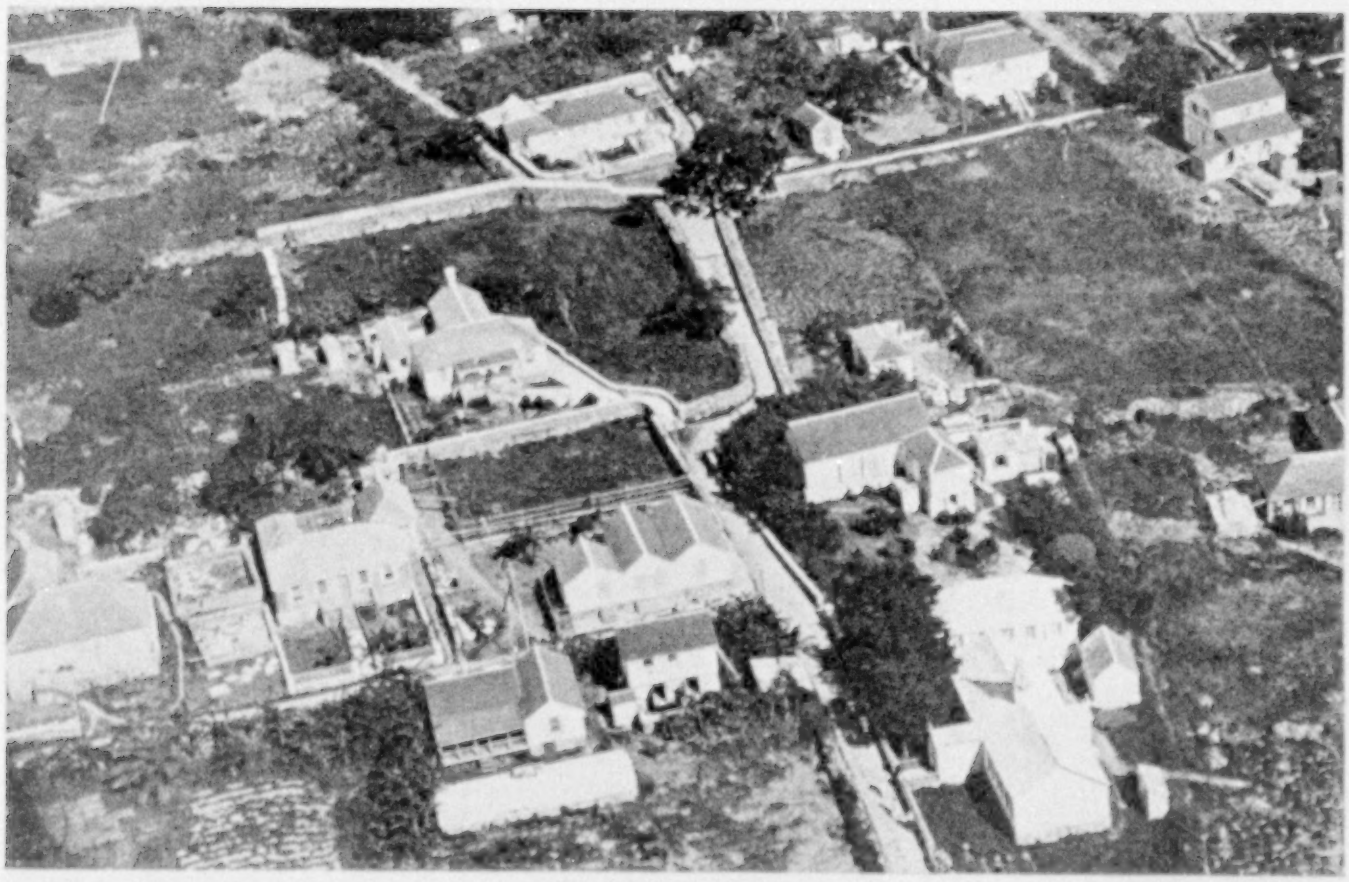
PEAKS OF ST. KITTS SNATCH A SHOWER FROM THE MORNING CLOUDS

This British West Indian garden spot is also called St. Christopher Island. Columbus found it in 1493 and named it after his patron saint. Rising 4,000 feet above the warm, blue seas, it makes sugar, molasses, and rum, and easily supports 36,000 people in comfort. Basseterre, with 8,000 inhabitants, is its capital.

Photograph by Gilbert Grosvenor

SABA LIES ON THE AIR ROUTE FROM VENEZUELA TO THE VIRGIN ISLANDS

This volcanic cone, owned by The Netherlands, has an area of about five square miles. Of the island's 1,600 inhabitants many are retired Dutch seagoing men, who chose this retreat for its singularly salubrious climate. No wheeled vehicles are known here (see, also, illustration below).



Photograph by Ewing Galloway

THIS TOWN LIES IN AN EXTINCT VOLCANIC CRATER

Saba Island rises to a height of nearly 3,000 feet. Its only settlement occupies the bottom of the crater and is appropriately named "Bottom." The Dutch-descended, but English-speaking, inhabitants build small boats and fishing craft which are famous in interisland trade and which must be lowered over the cliffs to a harborless shore. They also till upland fields.

Photograph by West Indian Aërial Express

TIRED AFTER A 1,050-MILE FLIGHT OVER WATER

Quitting the South American mainland at Maracay, near Caracas, Lindbergh took a crescent-shaped course over the Lesser Antilles, which, with Porto Rico, Haiti, and Cuba, form a semicircular land bridge between the Americas. Keeping to the west of Trinidad and Barbados, the flyer steered by compass, first for the island of Grenada; then, swinging more to the north, he passed St. Vincent, in the British Windward Group; thence north, over St. Lucia and past Martinique, girlhood home of the Empress Josephine and scene of the historic Pelée volcanic disaster of 1902. On this lap islands were always in sight—including Dominica, Guadeloupe, Montserrat, St. Kitts, and Saba—till the flyer finally landed on the golf grounds at St. Thomas, in the American-owned part of the Virgin group.

that the West Indian Islands and Central and South America offer wonderful opportunities for the establishment of regular air transportation.

Flying from Porto Rico to Santo Domingo required but little attention to navigation. There were many distinct landmarks. In addition, a tail wind was blowing, which kept me ahead of schedule, even with throttled engine. Low over the Porto Rican coast I passed a school of sharks; then a big sea turtle floating on top of the water, which dived as the plane approached.

Flying a modern plane under favorable conditions and off the beaten air lines requires very little attention beyond navigating and occasionally checking over the instruments. These record accurately the condition and performance of both ship and engine.

Without difficulty I wrote my newspaper dispatches on the back of a hydrographic chart while passing over the east end of Haiti. Sixteen hundred feet below was the jungle. A few miles ahead were clearings and farmhouses, and farther on a small city, standing out white and distinct against the green background of tropical mountains. Cumulus clouds, floating above, mottled the earth below me with a pattern of broken shadows.

FROM SUMMER TO SPRING IN A FEW MINUTES

I was still far ahead of my schedule. To keep from arriving too early, I made a trip to the cloud layer above. Cumulus clouds usually have many openings between them, so blind flying is necessary only for short intervals. At 7,200 feet I found myself inside of a cloud. Water

THE CAPITAL OF THE VIRGIN ISLANDS FROM THE AIR

This old city is situated on a fine harbor at the foot of tree-clad hills. Lacking wells or springs, it gets drinking water by catching rains that fall on artificial brick watersheds, one of which appears as a white spot above the center of the picture. The United States bought the Virgin Islands from Denmark and the street names are Danish, but the people prefer English. A street sign once read: "Cool sherbet and other such sippings."

Photographs by West Indian Aërial Express

UNDER AMERICAN RULE CHARLOTTE AMALIE HAS CHANGED ITS NAME

Even on gala days, as when the American flyer arrived, the chief city of the Virgin Islands, now called St. Thomas, is peaceful and orderly; but time was when Blackbeard is said to have made this his haunt, and while corsairs, pirates, and the sea hawks of Europe kept the whole Caribbean in an uproar, no man's life was safe.

Photograph by West Indian Aërial Express

CULEBRA ISLE, ON THE AIR ROUTE FROM ST. THOMAS TO PORTO RICO

© Elmendorf from Galloway

BARRELS OF MOLASSES ON THE BEACH AT ST. CROIX

Certain economic problems, severe at the time, arose for the natives when Denmark sold the Virgin Islands to the United States. A local Danish bank, for example, had a charter granting it the right to issue paper money; but when title to the islands passed, American money became legal tender and led to confusion. Lindbergh flew over St. Croix en route to Porto Rico (see text, page 581).

Photograph by West Indian Aërial Express

IF YOU WANT IT WELL DONE, DO IT YOURSELF!

Like Robinson Crusoe, the Lone Flyer survived because he left nothing to chance. He inspects his motor at St. Thomas, Virgin Islands, before starting for Porto Rico. At the extreme left is Governor Waldo Evans.

streamed off my wings and struts. Four hundred feet higher I climbed out of the cloud, above its billowy top layer. Here the sky was clear.

In just fourteen minutes I had changed from the warm air close to the ground to a fine, cool climate nearly 8,000 feet up, where I had to turn on the intake heater to keep up the engine temperature. One of the finest things about flying is that in a few hours you can get from one climate to another; or that in a few minutes of climbing or descending you can often find the temperature you want. I went on up to 9,700 feet. Santo Domingo was only a few minutes away.

"We are the oldest city in the New World," they told me in Santo Domingo. Work on the cathedral here was begun in 1514; it is the oldest in this hemisphere. It holds the tomb of Columbus; I was shown his casket. His family had a chapel here. Santo Domingo itself, it is recorded, was founded in 1496 by Bartholomew Columbus, brother of Christopher.

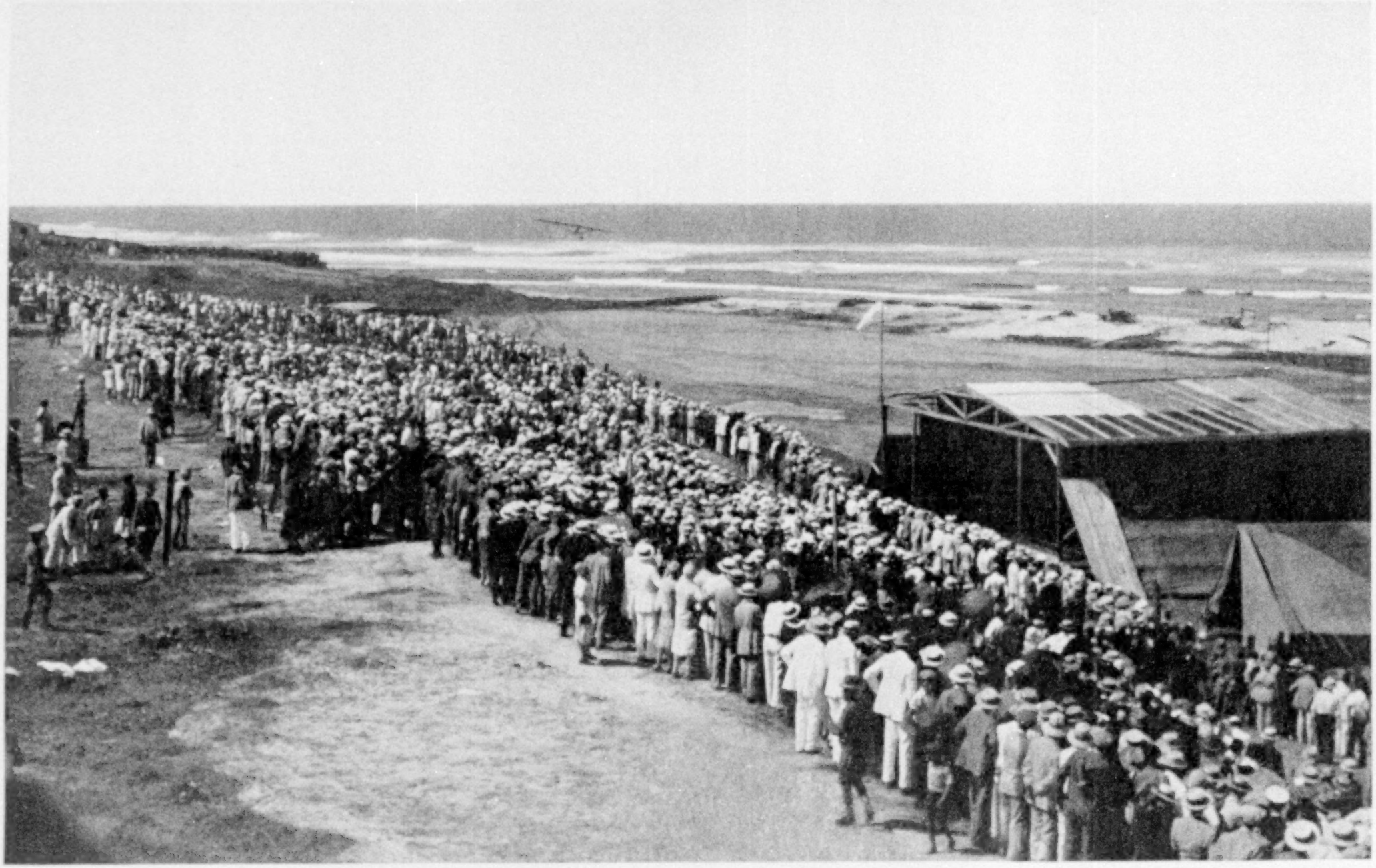
Circling above Santo Domingo, as I took off for Port au Prince, I could not help but think how times have changed. What a difference there is between the modern airplane and the *Pinta, Niña,* and *Santa María.*

FLYING OVER TWO REPUBLICS ON THE ISLAND OF HAITI

It was February 6 when I flew over that green island which holds the two republics of Haiti and Santo Domingo.

After leaving the tropical plain near the city of Santo Domingo and passing over low mountains, I climbed up over a high, fertile plateau covered with vegetation. Here, in this more temperate clime, stands Santiago de los Caballeros, the largest city in the interior of the Dominican Republic. I flew low over the crowd gathered on its aviation field. Then off for Cape Haitien, passing the famous citadel of Christophe, and on over Saint Marc on my course for Port au Prince.

Much of the country I flew over was



Photograph by Frederick E. Cook

SKIMMING ABOVE THE SURF NEAR SAN JUAN

At 2 p. m. on February 21, 1928, the *Spirit of St. Louis* reached San Juan, Porto Rico, on its long swing back from Bogotá over the isles of the Caribbean.

Photograph by Frederick E. Cook

PORTO RICAN SCHOOL CHILDREN GREET THE AMERICAN FLYER AT CAMPO DEL MORRO

In the background is the historic stone fort that guarded the entrance to San Juan harbor in Spanish colonial times (see, also, page 590). Since American occupation, in 1898, life in Porto Rico has greatly changed, through the conquest of disease, road building, and the rise of more public schools (see "Porto Rico, the Gate of Riches," by John Oliver La Gorce, in the NATIONAL GEOGRAPHIC MAGAZINE for December, 1924).

Photograph by R. Colorado

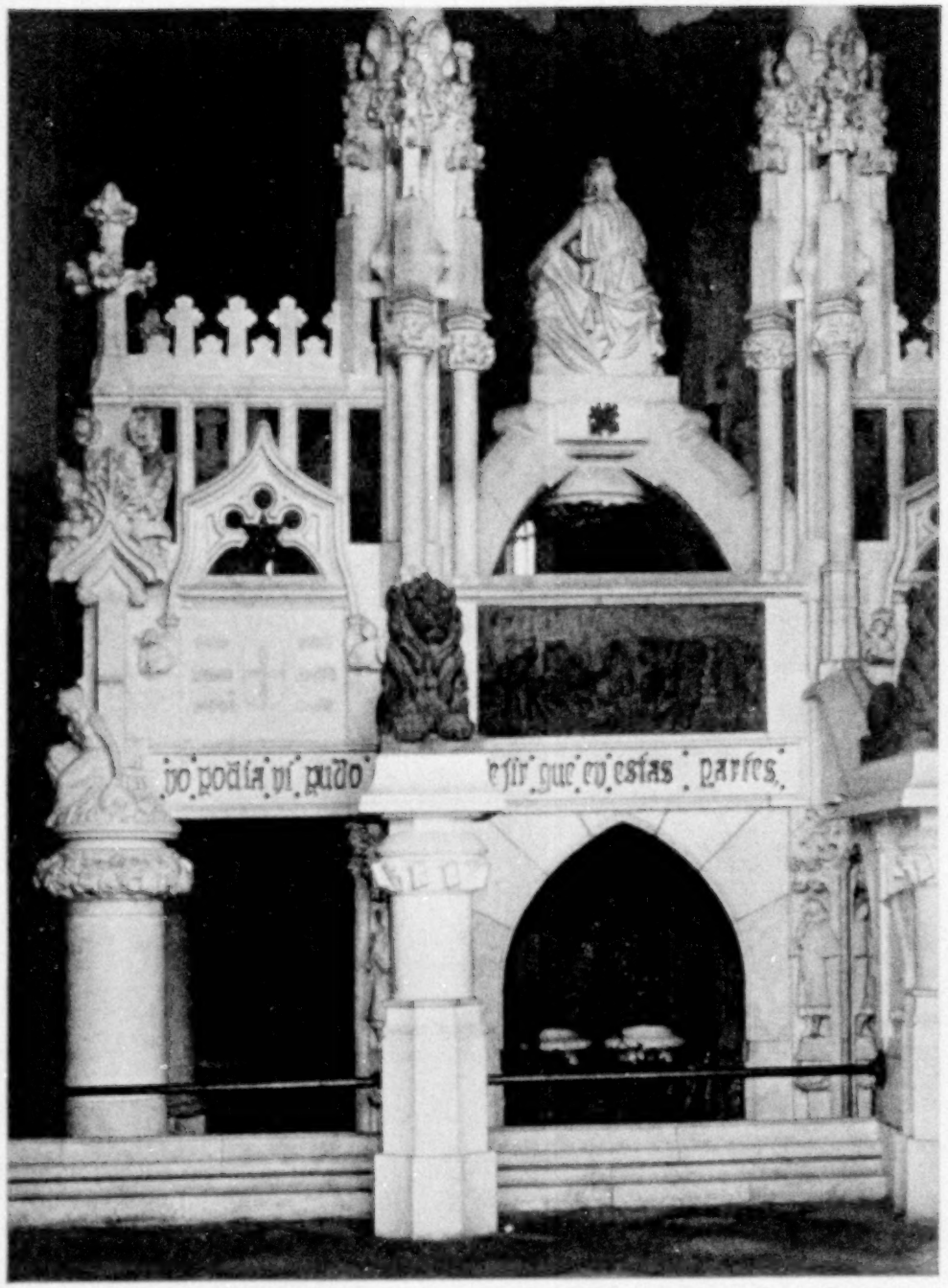
WHERE SPANISH MERCHANTMEN LAY SAFE UNDER SAN JUAN GUNS

On the outer end of the point stand the old Spanish coast-defense works (see, also, page 589). These early Spaniards were good engineers and excellent masons. Their old military road, built centuries ago across the mountainous island of Porto Rico, is a marvel of smooth rock paving and winding grades.

Photograph by International

TRADITION SAYS COLUMBUS TIED HIS SHIPS TO THIS TREE

The "Columbus Tree," as the Dominicans know it, lived for centuries beside the roadstead which forms the port of Santo Domingo. In 1910 experts placed its age at 600 years. It died in 1918, but portions of the trunk still stand, braced by concrete. That not only Columbus, but Ojeda, Nicuesa, Enuciso, and later Diego Columbus, son of Christopher, all tied their ships to this convenient tree, is the belief of the Dominicans, who reverently care for its remaining stump.



© Publishers' Photo Service

HERE THE ASHES OF COLUMBUS ARE BELIEVED TO REST

At his own request the great discoverer's remains were carried from Spain to Santo Domingo and interred in the cathedral. Spain subsequently decided to remove them to Havana, then to Seville; but later, in repairing the Santo Domingo Cathedral, a leaden casket was found marked "Cristóbal Colón, Primera Almirante." This inscription and other evidence point to an unsettled conclusion that Columbus still sleeps where he willed to sleep and not in Seville.

WAITING FOR THE "LINDY" SMILE

Young ladies of Santo Domingo, wearing "airplane hats" and "Lindy" neckties, aboard a float in the welcome fiesta to Colonel Lindbergh.

Photographs by R. Colorado

A NEW COLUMBUS—OF THE AIR—REDISCOVERS SANTO DOMINGO

As he winged his way over land and water, no welcome was warmer than that given the American flyer at Santo Domingo. Here models of the Eiffel Tower and the Goddess of Liberty were set up, emblematic of his New York-to-Paris flight.

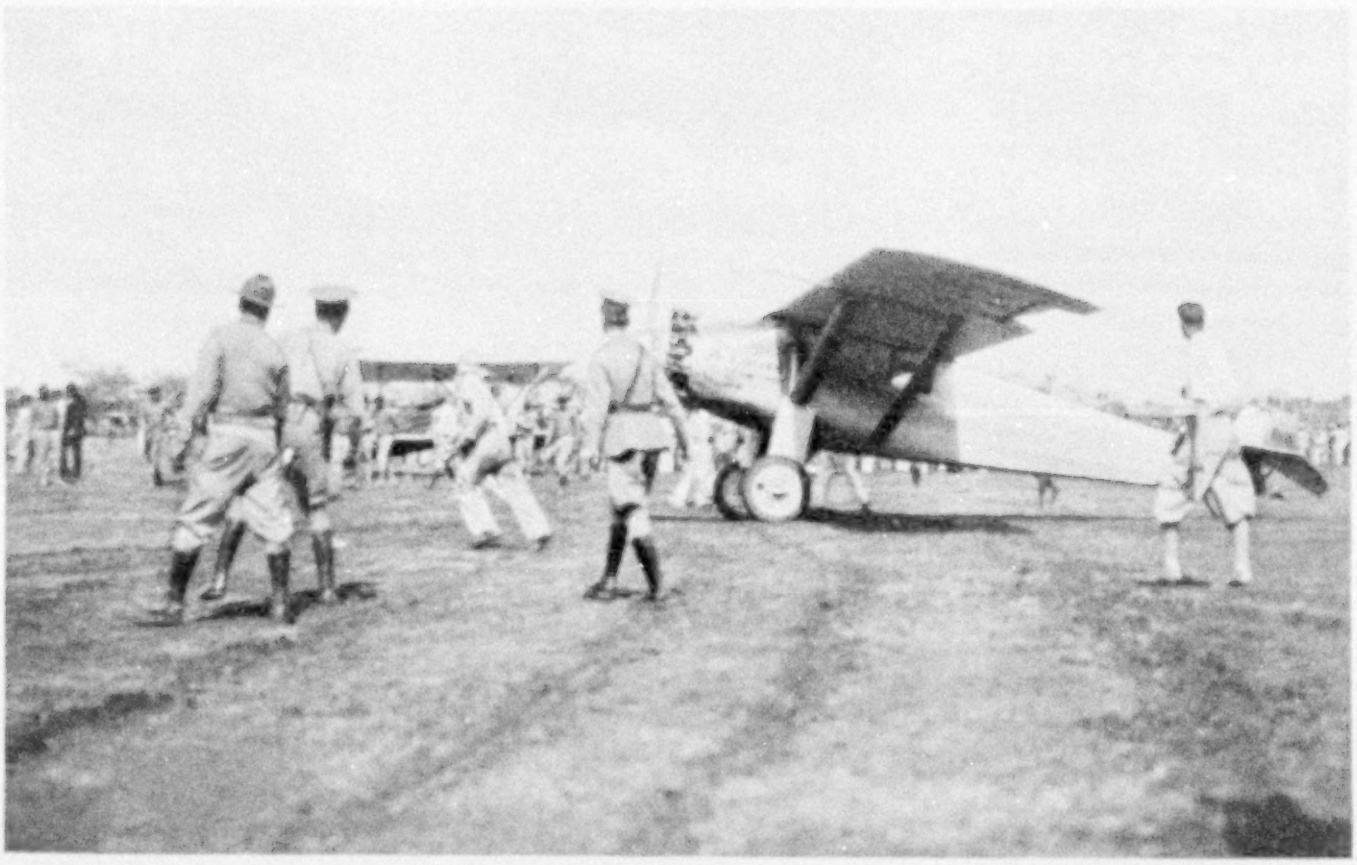
A PATIENT DONKEY UNDER A BIG LOAD IN SANTO DOMINGO

Looking at such a burdened beast, one often wonders why he doesn't simply lie down or balk till some of the weight is taken off. But it is his nature to plod.

Photographs by David E. Wendt

BRINGING MILK TO A CENTRAL STATION AT SAN CRISTÓBAL, DOMINICAN REPUBLIC

To the poorer class of farmers who own no vehicles, transportation is entirely by horseback. Indians called this Caribbean island, which is now divided between two black republics, "Haiti," or "High Land"; Columbus called it Española, later Latinized into Hispaniola.



Photograph by West Indian Aerial Express

THE "SPIRIT OF ST. LOUIS" LANDS AT PORT AU PRINCE

When inter-American air lines are established, one will follow the land bridge of islands from Florida to Venezuela. Frequent fueling stations will leave more space for passengers.

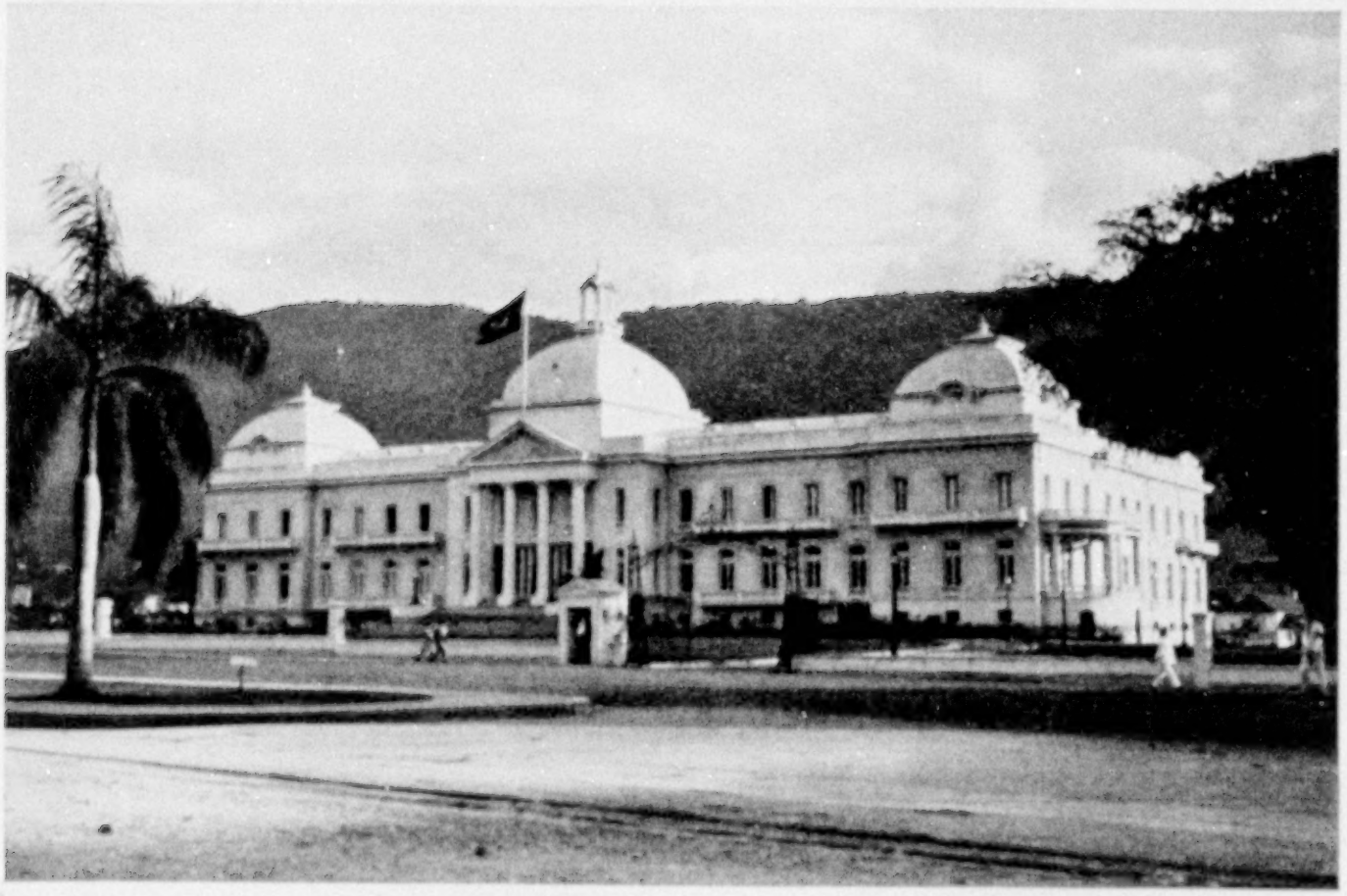
Photograph by R. Colorado

PORT AU PRINCE HAS TASTED BOTH GRIEF AND GLORY

Tempestuous Haiti's civic life has been as stormy as the tropical hurricanes that sweep it. Two million Indians, here when Columbus came, perished from earth. Finally, a free black nation was born of imported slaves. Now, to Uncle Sam, late years have handed the white man's burden of helpful guidance.

TILL NOW ISLAND PEOPLE HAVE DEPENDED ON BOATS

But the day is coming, Colonel Lindbergh believes, when the larger islands of the Caribbean will make more use of aircraft. A waterfront scene at Port au Prince, Haiti.



Photographs by R. Colorado

HAITI'S NATIONAL PALACE, WHERE THE FLYER WAS OFFICIALLY WELCOMED

This immaculate and architecturally pleasing edifice is set in a park around which the chief public buildings of Port au Prince are erected (see, also, page 596). When Colonel Lindbergh visited the palace to be received by the President and his cabinet, he found the palace guard of six-foot native troops drawn up in his honor.

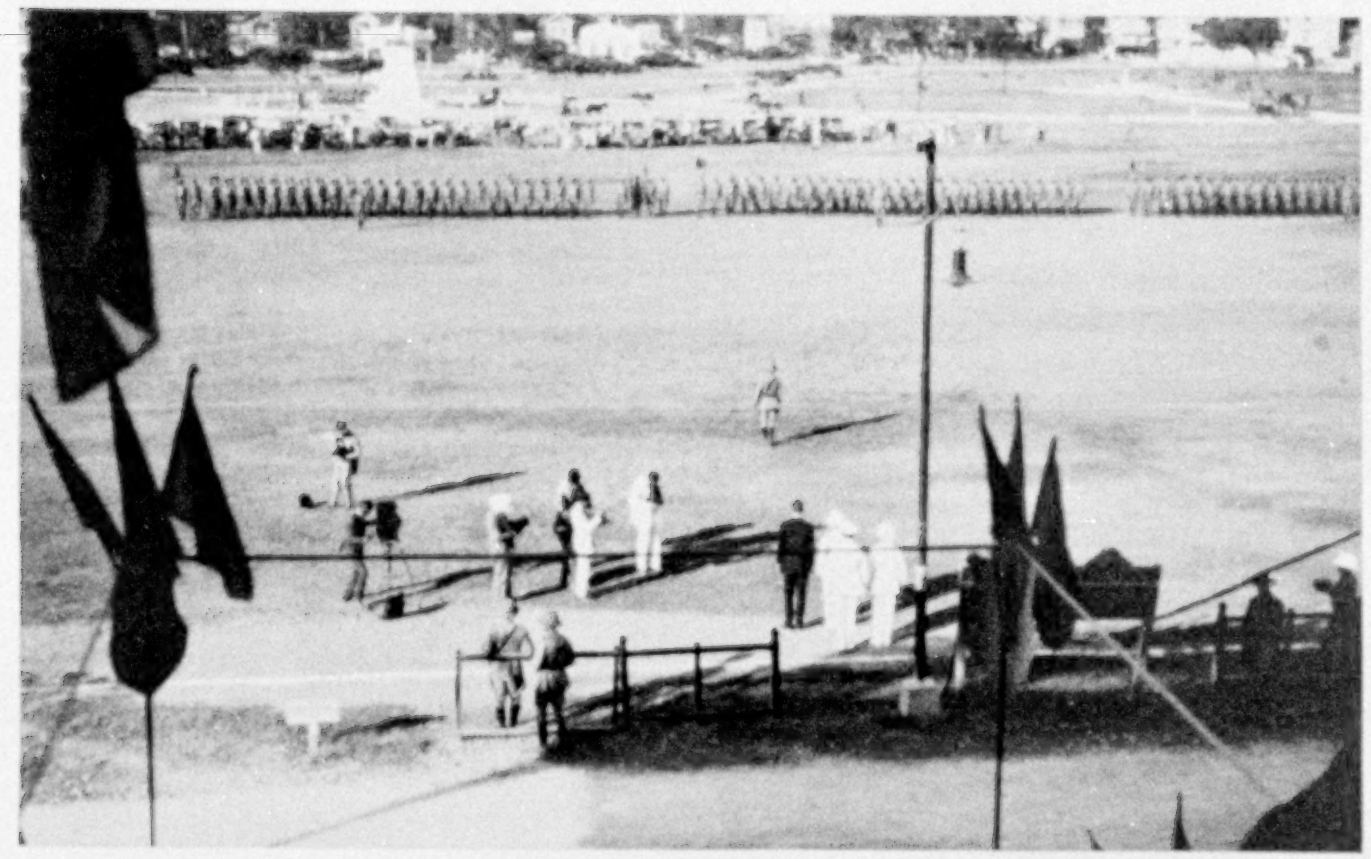
THE SKY PILOT OF INTERNATIONAL GOOD WILL IN HAITI

Because of the speed at which he passed from one country to another, no other "ambassador" ever functioned so fast as Colonel Lindbergh. In two months he paid official calls on twelve presidents and four governors, besides many mayors, commanding generals, and other dignitaries. The flyer is here seen at Port au Prince, with President Louis Borno, of the Republic of Haiti, at his left.

Photographs by R. Colorado

LOOKING DOWN UPON HAITI'S WHITE HOUSE

In 1801 Toussaint L'Ouverture, a former slave, wrote a constitution, proclaimed Haiti free of France, and made himself ruler. But Napoleon took offense; he reëstablished slavery. Toussaint, duped into attending a conference, was captured, taken to France, and there died in jail.



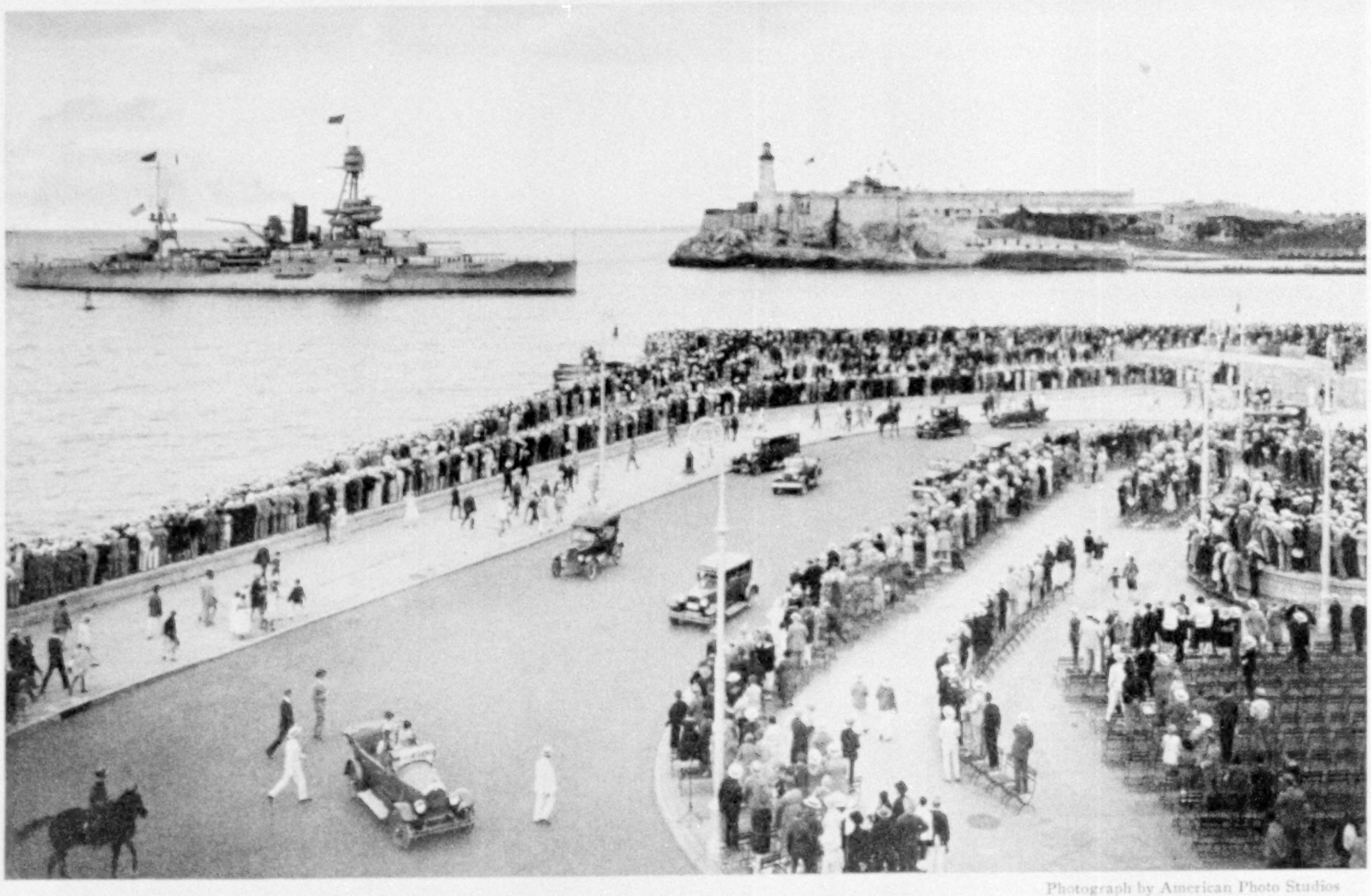
THE AMERICAN FLYER REVIEWS TROOPS AT PORT AU PRINCE

Improved conditions in Haiti are reflected not only by the discipline of such troops, but by the enlightenment of its present-day executives. It has been said of Nord Alexis, who was president of the republic a quarter of a century ago, that when faced with the question of death or pardon for a prisoner, he decided by dropping a clay image on the floor. If it broke, the prisoner must die.

Photographs by R. Colorado

CHRISTIANITY HAS HAD TO COMBAT THE BLACK ARTS IN HAITI

From Africa, with the slaves, came strange superstitions, involving voodooism, signs, portents, traditions of child sacrifice, and belief in the "obeah" curse. Despite the spread of schools, fear of the black arts vanished slowly, especially among the humbler country folk.



Photograph by American Photo Studios

HAVANA GREETS PRESIDENT COOLIDGE, ARRIVING ON THE "TEXAS" FOR THE 1928 PAN AMERICAN CONGRESS

While delegates from the United States, Mexico, and the various Latin-American republics were still in session in the Cuban capital, discussing their political and economic relations, Colonel Lindbergh arrived from the south.

very broken. They say here that an old sailor, asked to describe this island, crumpled up a sheet of paper, put it on a table, and said, "There it is." This was a good way to describe its topography.

Crossing the Dominican Republic and Haiti, I saw many thatched native houses, often perched high up on steep mountain slopes, as in Central America, with cultivated patches around them. Modern villas, trim and comfortable, stood in the plains and valleys near the towns. The countryside in Haiti, I noticed, was much more thickly settled than in the Dominican Republic. The roads were covered with country people walking to and from market.

COTTON GROWING ON TREES IN HAITI

Before landing at Port au Prince I circled over the bay, then back above the business districts. Here I could see crowds of people out in the middle of the streets. The thing that struck me most in Haiti was the change from Spanish to French. This was the first republic on the tour where Spanish was not spoken; but here, as elsewhere on my trip, I found that many of the people spoke English.

Another sight in Haiti that interested me was a type of cotton which I saw growing on the experimental farm of the Damien Agricultural School. Instead of bushes, this cotton grows on trees 8 to 10 feet high and does not require replanting each year. I was told that it often grows wild in Haiti and produces a good grade of cotton. On this same farm there were fields of cane and sweet potatoes and banana plantations—and many young Haitians were being trained in the methods of modern agriculture.

It was the morning of the 8th of February when I left Haiti for Cuba, on my second longest flight since leaving Mexico City, nearly 800 miles. The *Spirit of St. Louis* had then been in the air, during its life, for more than 459 hours. It had made 167 flights and flown nearly 40,000 miles. Its original motor had never been replaced nor had a major overhauling. Neither plane nor engine had ever had over 5 per cent of replacements; yet both were in fine condition and seemed entirely capable of flying another 40,000 miles or even more. I believe that, with the right care and upkeep, the modern plane and engine should have a minimum life of 150,000 miles.

By 9:20 a. m. I was over eastern Cuba. Below lay a semitropical growth broken by small fields and banana plantations. A few miles away to the south, along the coast, I saw a ridge of mountains rising hundreds of feet above my altitude. To my north was the Guantánamo Valley, covered with fields of sugar cane. Here the whole country looked thickly inhabited and many small towns were in sight.

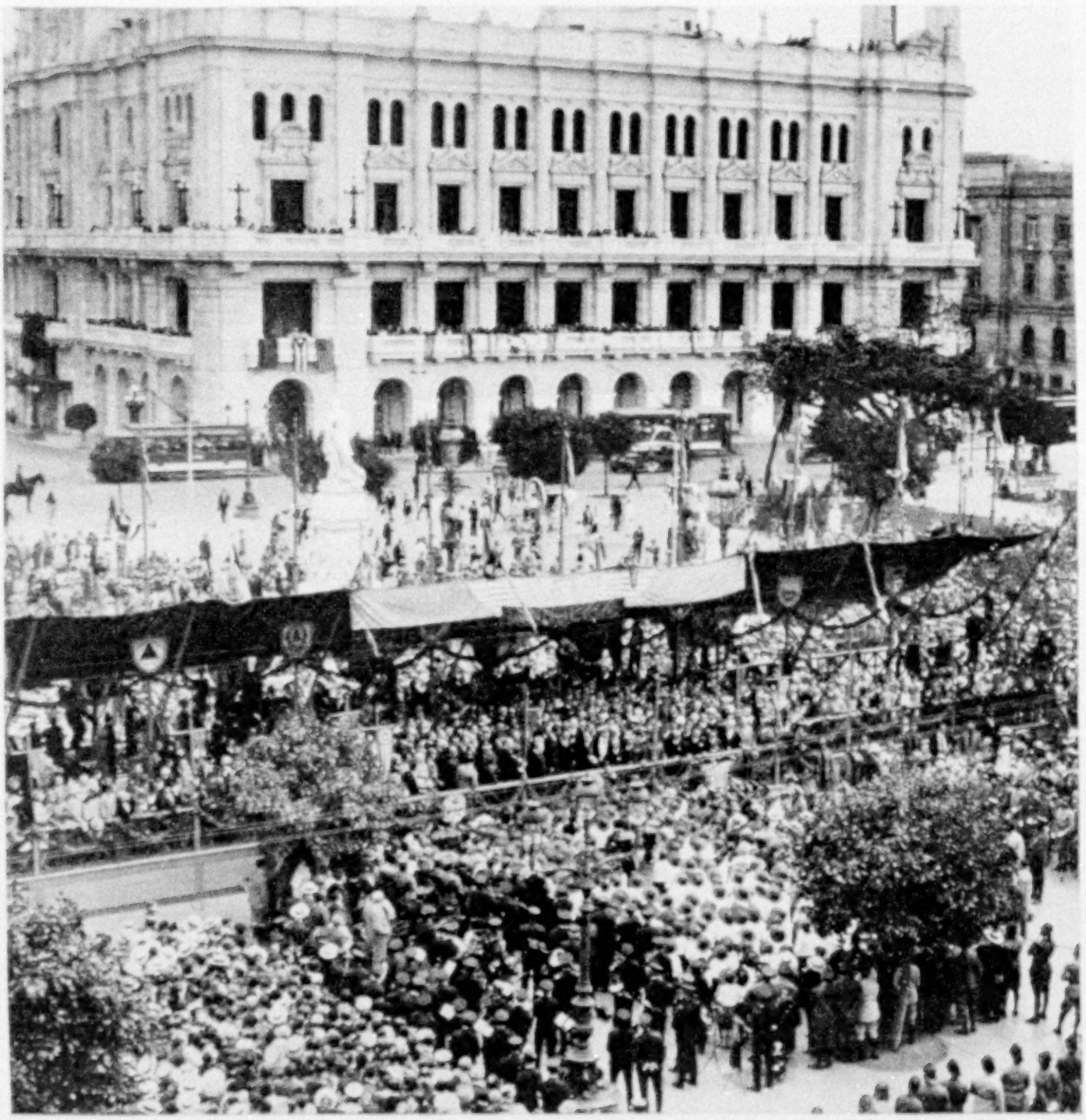
In the plane with me were three sacks of mail, the first air mail ever carried in the *Spirit of St. Louis*. One bag was from Santo Domingo. Although I left it in the plane for two days while in Port au Prince, it still got to Havana days sooner than it could have by boat.

This territory is waiting for air lines. It holds opportunities for commerce, and for tourists it has unlimited attractions, both climatic and historical. In a few years, undoubtedly, there will be air lines operating between the two American continents, by way of the West Indian Islands, and, in addition, there will be a route between Mexico and Central America. Herein lies a field open now for development with our existing equipment.

AIRPLANE CAUSES PANIC AMONG WATERFOWL

I flew on over Río Cauto. Ten miles away, to the south, was the Gulf of Guacanayabo. Flat plains extended many miles inland to mountains barely visible on the horizon. Along the coast I saw thousands of waterfowl. They flopped away in panic from my plane. For half a mile out from the beach I could see the bottom of the sea. I saw two sharks, and there were fish in sight up to three feet in length. Some of the larger birds doubled up their wings and fell into the water as the plane overtook them. I flew on, over the interior of Cuba, over many sugar plantations with sugar mills and many good places to land. At 3:40 p. m. I was over Havana.

This beautiful city was very kind to me. It was full of Americans. Its business and social relations with our mainland seemed very close. At its airport I saw the large three-motor planes which



Photograph by American Photo Studios

THE FLYER RECEIVES THE KEYS TO THE CITY OF HAVANA

Before an enthusiastic gathering in Central Park, Mayor Gómez makes the presentation to Colonel Lindbergh.

make daily trips between Havana and Key West.

Here I inspected my plane. Nothing but fuel was needed to put her in shape for the flight home. The motor was still working as well as ever, and the plane itself showed very little wear, in spite of its long flight through the rains and winds of hot countries.

From Havana I planned to fly to Key West, and then up the Gulf coast to a point where I might take up a compass course for St. Louis. As I have said, I do not believe it wise to make unnecessarily long flights in a single-motored plane over water. That was why, on this tour, I always reduced the water hops to a minimum.

LEAVES HAVANA ON FIRST ANNIVERSARY OF LAST FLIGHT AS AIR-MAIL PILOT

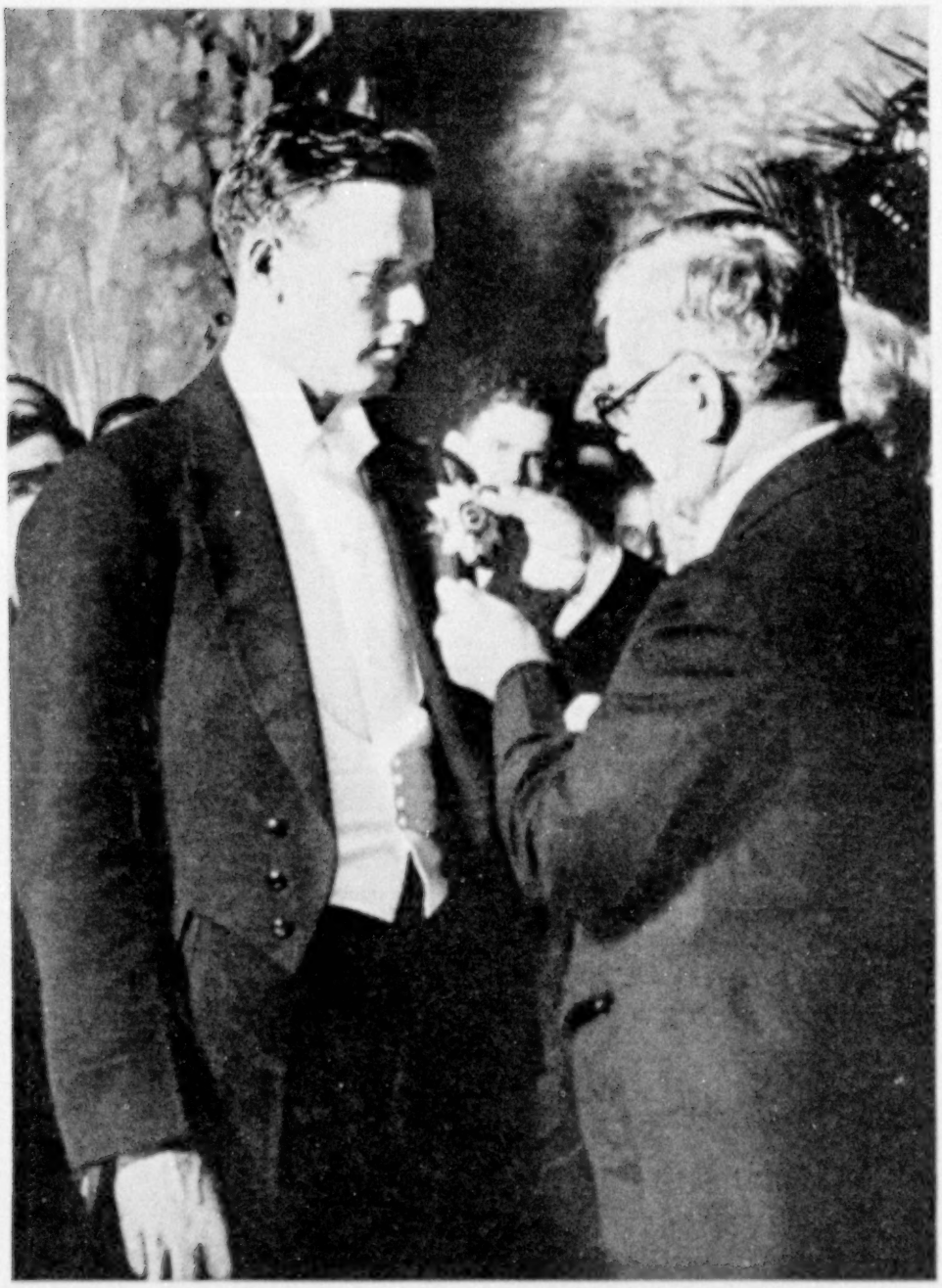
It was February 13 when I took off from Havana. To me this was a significant anniversary. I had taken off from Bolling Field for Mexico City exactly two months before. It was a just a year after

I had made my last flight as a mail pilot from St. Louis to Chicago.

I started in the rain and fog and came back in it. Soon after I left Havana, very early in the morning, I ran into rain and poor visibility. By the time I got over north Florida the clouds were so low that I was flying within a few feet of the tree tops. At the Georgia line wisps of fog hung to the ground, and often I had to fly by instruments. It was so all across Georgia and Alabama.

I kept the ground in sight when I could. If the fog got too thick, I flew by instruments, high enough to clear the hilltops, until, through some hole in the mist, I could again see the ground. Once I went up to 7,000 feet before reaching clear sky.

Through Tennessee and Kentucky it got a little better, but as I neared St. Louis it again became difficult to keep contact with the ground.



Photograph by Underwood & Underwood

CUBA'S PRESIDENT DECORATES THE FLYER

The Grand Cross of the Order of Miguel de Céspedes is the highest honor Cuba can bestow. President Machado pinned this on Colonel Lindbergh. Only six others have ever received this medal.

Picking up St. Louis, I flew along its waterfront; but I could not circle over the city, as high buildings extended up into the clouds. North of town the smoke and haze grew so thick that I pulled up to 1,200 feet and flew several miles before coming down again. Then I followed the Missouri River around to St. Charles. Guided from there by a paved road which I knew, I flew to Lambert Field.

IN THE AIR 125 HOURS ON TWO-MONTHS' TRIP

It was 5:10, central time, when I landed, after a flight of fifteen hours and 35 minutes from Havana.

Flying in the fog is still our greatest problem in air traffic.

My air excursion over Latin America took exactly two months. I was in the air over 125 hours and flew over thirteen countries.

During this time I was treated with the courtesy and hospitality which is traditional of Latin America.

Space will not allow the expression of my gratitude to the countless friends I left in our sister countries, but I have returned home with the feeling that the ties of friendship existing between the American republics are far too great ever to be broken by misunderstanding.

© Aëro Service

AN AIRPLANE VIEW OF MOUNT VERNON

In the foreground is the entrance to the serpentine drive, which winds its sinuous way to the door of the mansion (see Color Plate XIII). On each side of the great house the smaller dependent structures are grouped, while at the upper right is the summer house (see Color Plate XI), and beyond that the river. The formal gardens and buildings that were formerly servants' quarters are at the left. Like a black pencil line, at the upper left, runs the low boundary to the garden, known as the ha-ha wall.

THE HOME OF THE FIRST FARMER OF AMERICA

By Worth E. Shoults

Author of "Hospitality of the Czechs," in the National Geographic Magazine

"NO ESTATE in United America is more pleasantly situated than this. It lies in a high, dry, and healthy country, 300 miles by water from the sea . . . on one of the finest rivers in the world."

Thus the famous master of Mount Vernon appraised America's most cherished shrine when writing of it to a friend in 1793.

The broad expanse of the Potomac, the wooded beauty of the Maryland shore beyond, and the combined charms of the great trees, spacious lawns, and flowering gardens of the estate itself remain to-day much as they were when Washington wrote of them.

The first white proprietors of this superbly located plot of land were two old prospectors, who by authority of the Royal Governor patented it nearly 300 years ago. They made no effort, however, to comply with the provisions of the law which required them to place tenants on the property, and in consequence their title to 4,000 acres reverted to the Commonwealth.

MOUNT VERNON ONCE SOLD FOR $900

In 1674 the patent to the land, along with some additional acreage, was reissued by Lord Culpeper to John Washington and Nicholas Spencer. Three Washingtons held the land before it came into the possession of Augustine, father of Lawrence and George, who purchased it from his sister for $900 and built the first house on it about 1734. This small dwelling was burned five years later, and its owner moved with his family to a farm near Fredericksburg, where he died in 1743.

Under the provisions of his will, the estate on the Potomac passed to Augustine's son Lawrence, who made his residence there and gave the place its name in honor of Admiral Vernon, of the British Navy, under whom he had campaigned against the Spaniards in the West Indies and for whom he entertained a deep respect and affection.

Uncertainty shrouds the origin of the present mansion. Certain of the records indicate that Lawrence Washington began its construction, while others seem to show that his father built it.

In 1747 George Washington came to Mount Vernon to make his permanent home with his high-minded and cultured half-brother.

TOBACCO WAS THE PRINCIPAL CROP OF COLONIAL VIRGINIA

During Lawrence Washington's mastership, Mount Vernon began to assume a position of some importance in the Colony. The able young proprietor was active in public affairs. He was appointed adjutant of his military district by the Royal Governor and several times represented his county in the Virginia House of Burgesses. He was also much interested in projects for the colonization of frontier lands and served as president of a company formed for that purpose by a group of prominent Virginians.

Lawrence Washington died in 1752, and left Mount Vernon to his infant daughter, Sarah, who survived her father by only a few months. On her death the property went to George, with certain provisions as to the widow's rights in the income derived from it. This entail the new owner soon purchased for an annual price of ". . . the sum or quantity of fifteen thousand pounds of tobacco in fifteen hogsheads . . . or as much current money of Virginia in lieu thereof as will be equal thereto at twelve (12) shillings and six pence, current money, for every hundredweight of tobacco." Before he had reached his majority, George Washington was the sole proprietor of Mount Vernon, then an estate of 2,700 acres.

The Mount Vernon of 1752 and that of to-day, which is essentially as George Washington left it, were not much alike. The house was a simple one, without the present mansion's third story, banquet hall, library, or the chambers above these additions. Neither did it have the colon-

nades or the great portico overlooking the river.

The old brick barn, built by Augustine Washington nearly 20 years earlier, had survived the fire that destroyed his house and is still standing, the oldest structure on the estate. This, with a few slave cabins, were the only outbuildings then existing. Indeed, it was not until after George Washington married that he began to improve his holdings on a large scale.

WASHINGTON FOUND HAPPINESS IN FARMING

Like most Virginians of his day, the future Father of His Country was possessed of a lively land hunger, and by gradual acquisition he increased his Mount Vernon property from the 2,700 acres which he had inherited to a domain of approximately 8,000 acres.

The management of so great a holding presented large problems of administration, but no man in the colonies was better fitted than George Washington to meet them successfully. He was by natural instinct a farmer, and he found his greatest happiness in his marriage and the care and development of his home. He wrote to a relative in England, soon after his marriage: "I am now, I believe, fixed at this seat with an agreeable consort for life. And hope to find more happiness in retirement than I ever experienced amidst a wide and bustling world."

But Washington was not content to be a country gentleman who farmed in the disastrous manner then generally in vogue in Virginia. He early realized that extensive and unbroken tobacco planting was ruinous to the soil, and in 1785 wrote to Mr. Fairfax in England: "Our course of husbandry in this country, and more especially in this State, is not only exceedingly unprofitable, but so destructive to our lands that it is my earnest wish to adopt a better. . . ." At Mount Vernon he grew only so much tobacco as was absolutely necessary in an age when the soporific leaf served as a medium of exchange. Wheat, corn, turnips, and hay he raised extensively, pursuing a careful system of crop rotation and fertilizing his fields liberally.

Mount Vernon was the first real experimental farm on the North American Continent. Washington made of his estate an agricultural laboratory, wherein he put to practical application the new theories of soil cultivation and stock breeding that were then being expounded successfully in England.

For years prior to the Revolution, he experimented in a comparatively small way, and while the struggle for liberty put an end to these activities for a time, it enabled him frequently to come in contact with the methods of agriculture used in the other colonies. As a result, he accumulated much valuable information which he put to good use in later years.

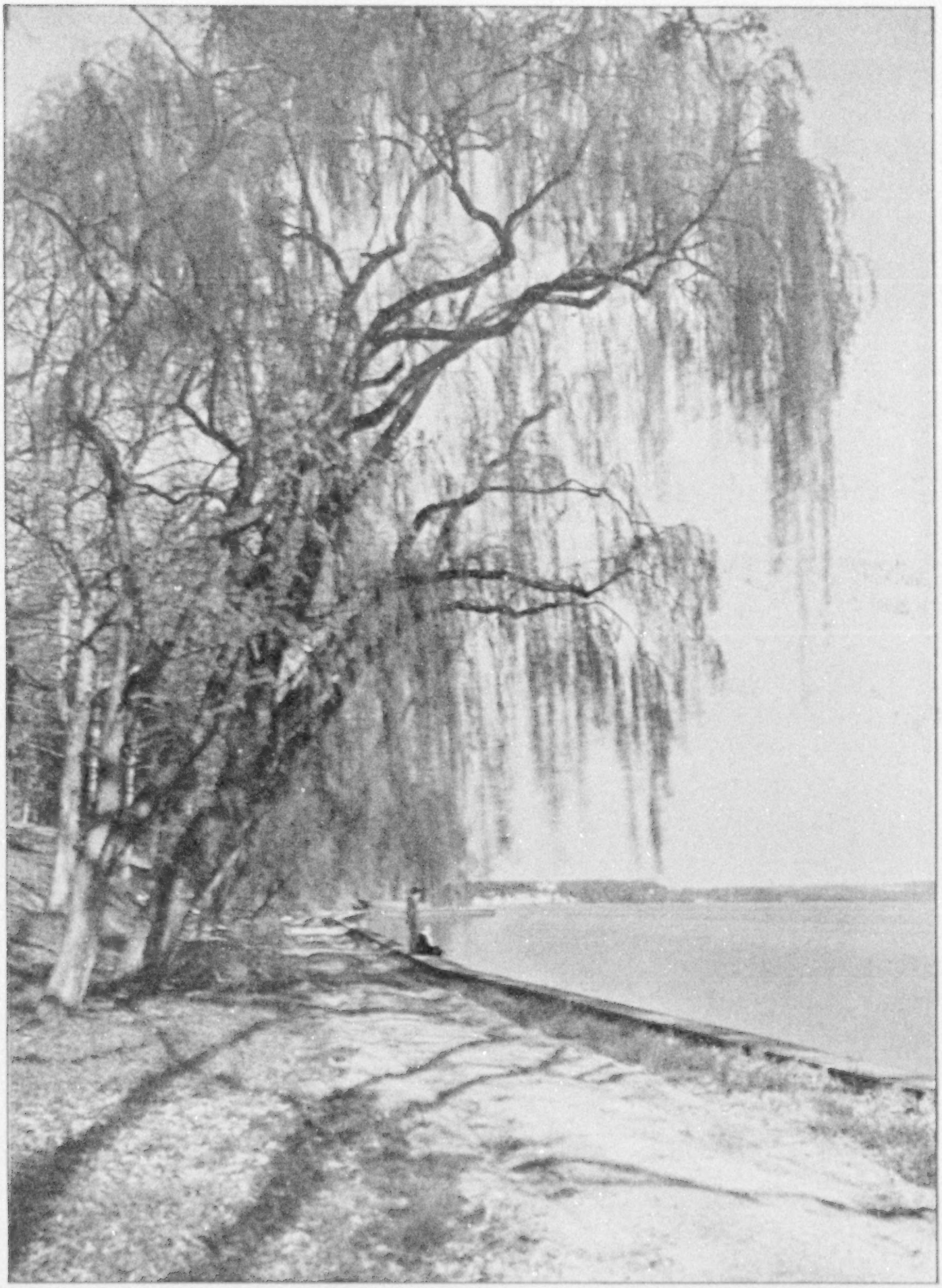
His return after the war marked the beginning of an era of energetic effort to improve and beautify the place he loved so well. Plants, seeds, and cuttings were imported from Europe, while many more were received from friends, both at home and abroad.

THE MULE STOOD IN HIGH FAVOR AT MOUNT VERNON

In General Washington's day mules were not commonly used in America and those that were seem to have been of an inferior breed. He made earnest efforts to better the stock and was greatly aided in his experiments along this line by two gifts from abroad. Lafayette sent him two spirited jennies and a jack from the Isle of Malta, while the King of Spain also made him a present of a similar trio of high-bred Spanish stock.

In writing to his friend Arthur Young in December, 1788, Washington expressed his opinions of these animals:

"The Spanish jack seems calculated to breed for heavy slowdraught; and the others (the Lafayette jacks) for the saddle or lighter carriages. From these, altogether, I hope to secure a race of extraordinary goodness, which will stock the country. Their longevity and cheap keeping will be circumstances much in their favor. I am convinced, from the little experiments I have made with the ordinary mules (which perform as much labor with vastly less feeding than horses), that those of a superior quality will be the best cattle we can employ for the harness; and indeed in a few years I intend to drive no other in my carriage, having appropriated, for the sole purpose of breeding them, upwards of twenty of my best mares."



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ST. HELENA WILLOWS STAND GUARD ALONG THE MOUNT VERNON RIVER FRONT

A quarter of a century ago, these trees were planted as bulwarks against seepage and the incursions of the tides of the Potomac. They were slipped in direct line from a beautiful tree that once grew by the grave of Napoleon at St. Helena.

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SPRING IS PRODIGAL WITH HER CHARMS AT MOUNT VERNON

From the dormer window of her bedroom, which may be seen between two cedar trees, Martha Washington could look out along the slope of the hillside to the grave of her husband. Most of the smaller planting at Mount Vernon is of recent origin, but some of the large trees date back to the tenure of the illustrious master.

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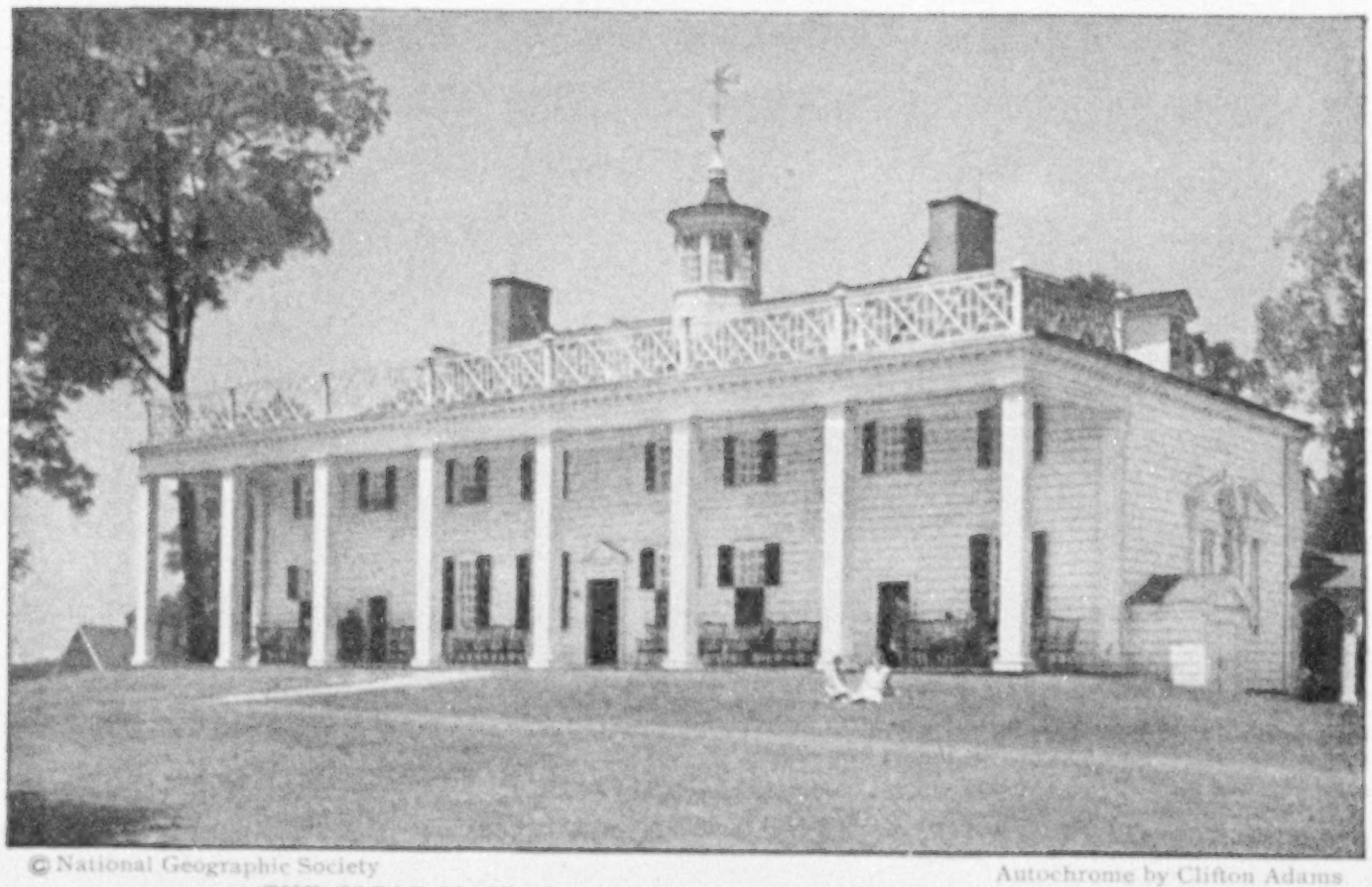
AMERICA'S MOST HALLOWED SHRINE

George Washington came to live at Mount Vernon as a boy, and for fifty-two years, until the day of his death in 1799, it was the home of his heart. The two large pecan trees in the picture were seedlings when presented by Thomas Jefferson and planted by Washington. Mount Vernon was named in honor of Admiral Vernon of the British Navy, under whom Lawrence Washington served in a West Indian campaign.



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THE GREAT PIAZZA SAW MANY A LAVISH ENTERTAINMENT

Hardly a day passed during Washington's proprietorship at Mount Vernon that guests were not present. The latchstring was ever out, for friend and stranger alike, and in mild weather much of the entertaining was done on this broad veranda which commands a superb view of the Potomac (see, also, Color Plate XII).

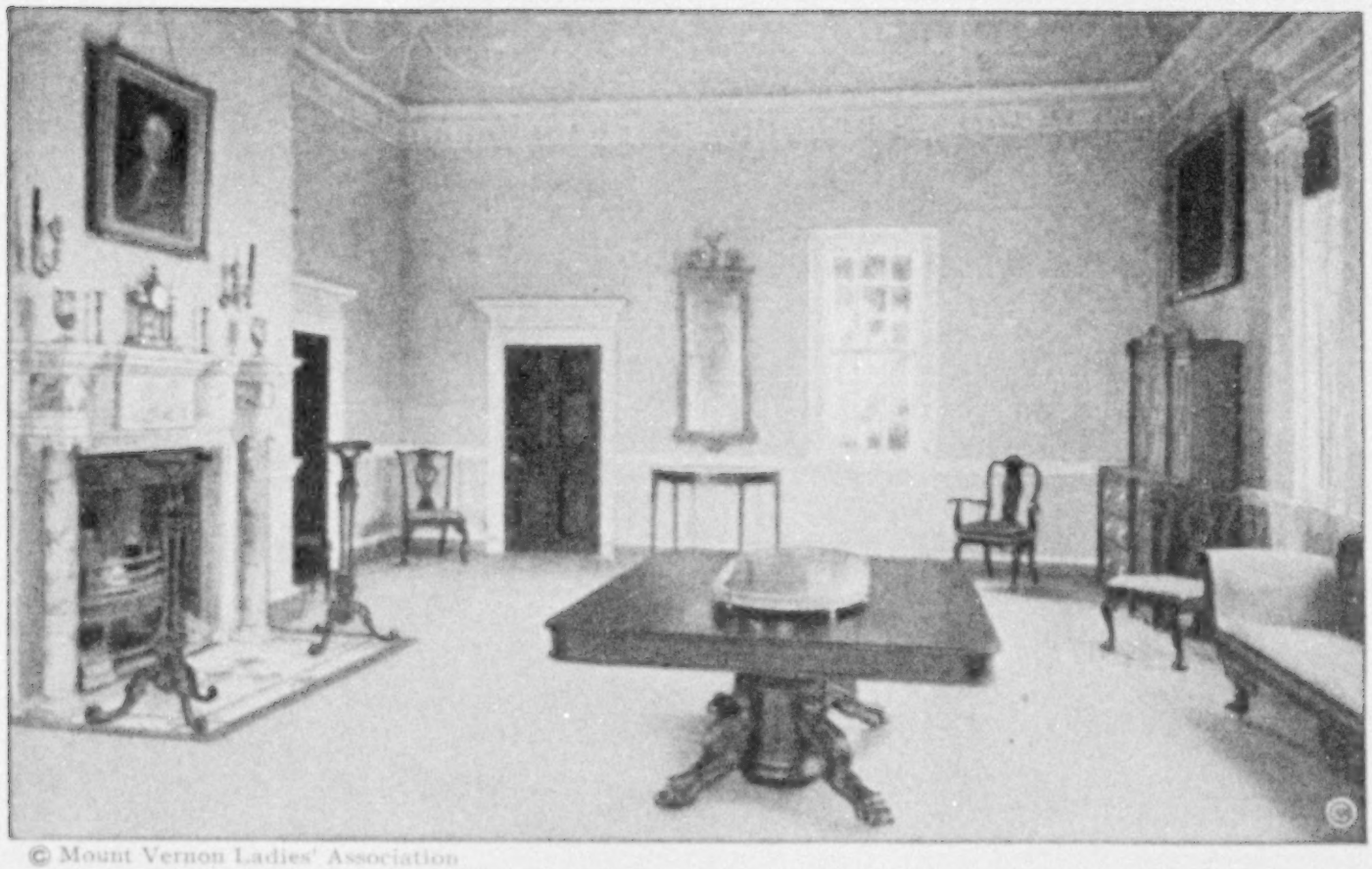
© Mount Vernon Ladies' Association

THE LIBRARY WAS GENERAL WASHINGTON'S WORKSHOP

The desk and its chair were willed by the master to his friend and physician, Dr. James Craik. After wandering for more than a century, they were returned to Mount Vernon in 1905. The globe also belonged to General Washington, as well as some of the books and the wall thermometers hanging on each side of the secretary.

THE CENTRAL HALL AND STAIRWAY OF THE MANSION

The large clock on the stairs and the hanging lantern were brought to the mansion by Lawrence Washington. In a frame on the wall at the left is the key to the Bastile, presented to General Washington by Lafayette after the capture of the fortress prison by the Revolutionists in 1789. In a case above the table at the right are four of Washington's swords.



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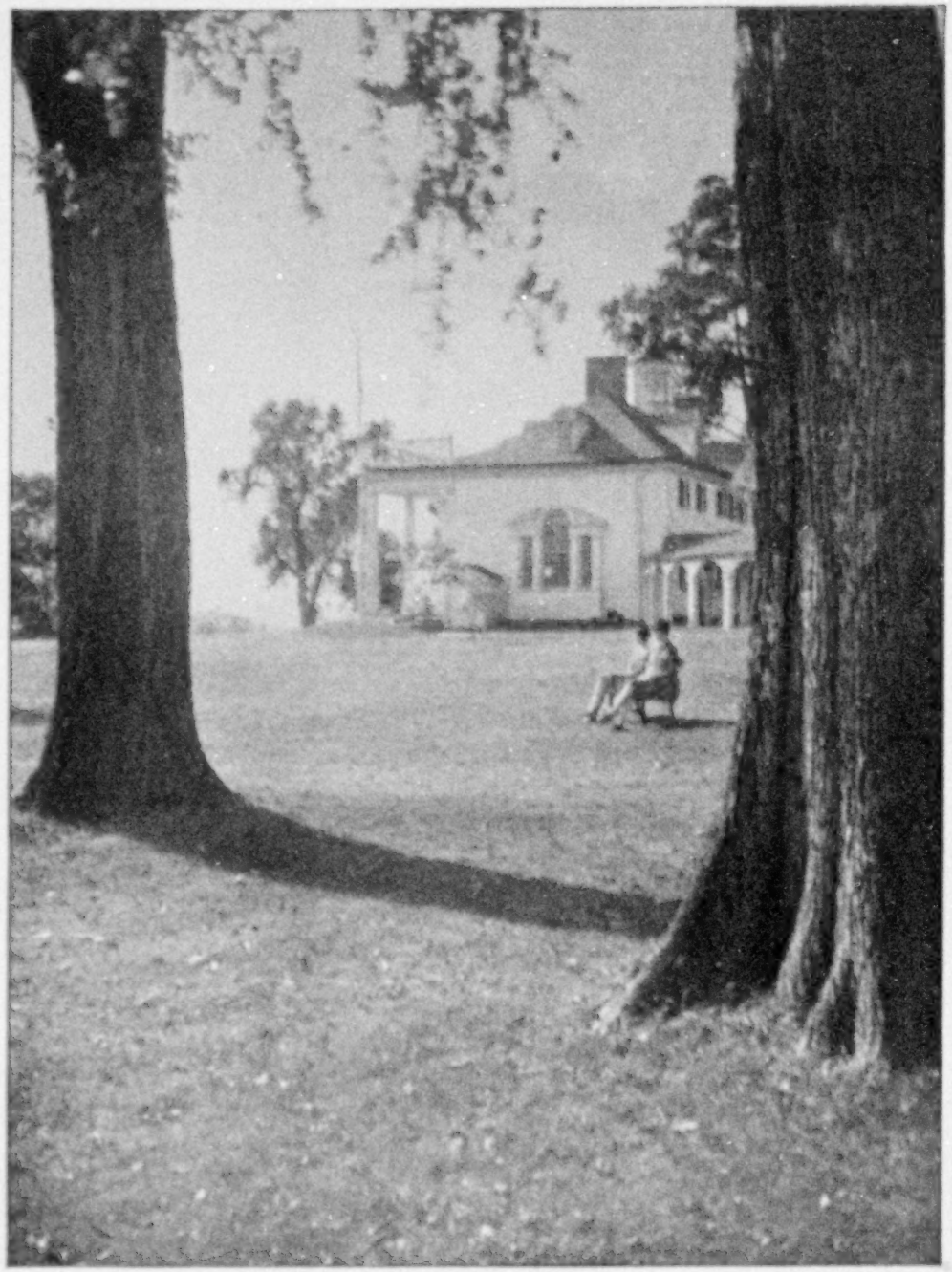
THE BANQUET HALL'S CONSTRUCTION WAS SUPERVISED BY POST

The lavish hospitality that was so freely extended at Mount Vernon necessitated a very large dining room. At General Washington's death there were twenty-seven mahogany chairs in this room. The marble mantle was presented to him by an English admirer and the clock, candlesticks and vases are all original furnishings.



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ASH AND ELM PROVIDE A FRAME

Across the spacious lawns this vista of the east end of the mansion provides an excellent view of the beautiful banquet hall window. This room was added to the house while General Washington was away at the head of the Continental Army, but he superintended and directed its construction by post.

Autochrome by J. H. Dorsett

TULIP TIME IN OLD VIRGINIA

Few estates in the Colonies could boast such exquisitely planned and executed gardens as those at Mount Vernon. One of the great President's hobbies was the beautification of his home, and the Mount Vernon Ladies' Association has made every effort to keep the estate just as he planned it.

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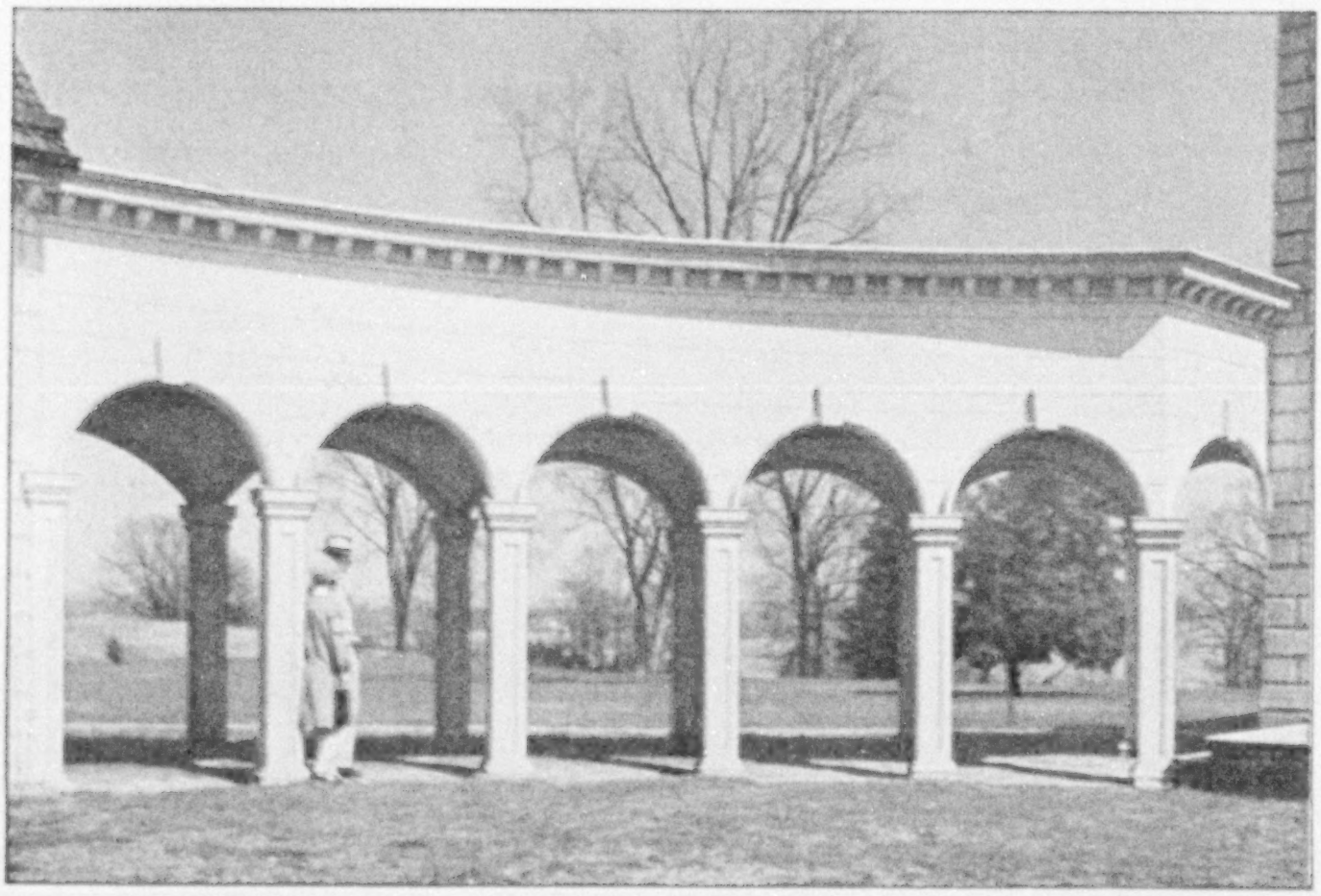
Autochrome by J. H. Dorsett

ONE OF THE SERVANTS' HALLS AT MOUNT VERNON

Distances were great in colonial days, and when gentlemen traveled they went by coach and took with them a numerous retinue of attendants. They usually stayed overnight at some convenient plantation, and the generous and flexible social code of the times decreed that when a guest arrived, invited or otherwise, he should be quartered in the master's house. His attendants found accommodations in the servants' quarters, and his horses were stabled and fed. At Mount Vernon there were two sizable servants' halls; this is the East Quarter.



Autochrome by Clifton Adams

THROUGH THE ARCHES OF THE EAST COLONNADE

Although they create a distinctively decorative effect, these curved and covered colonnades were not primarily intended as ornaments. They served the utilitarian purpose of connecting the mansion with the white servants' quarters on the east and with the kitchen on the west.

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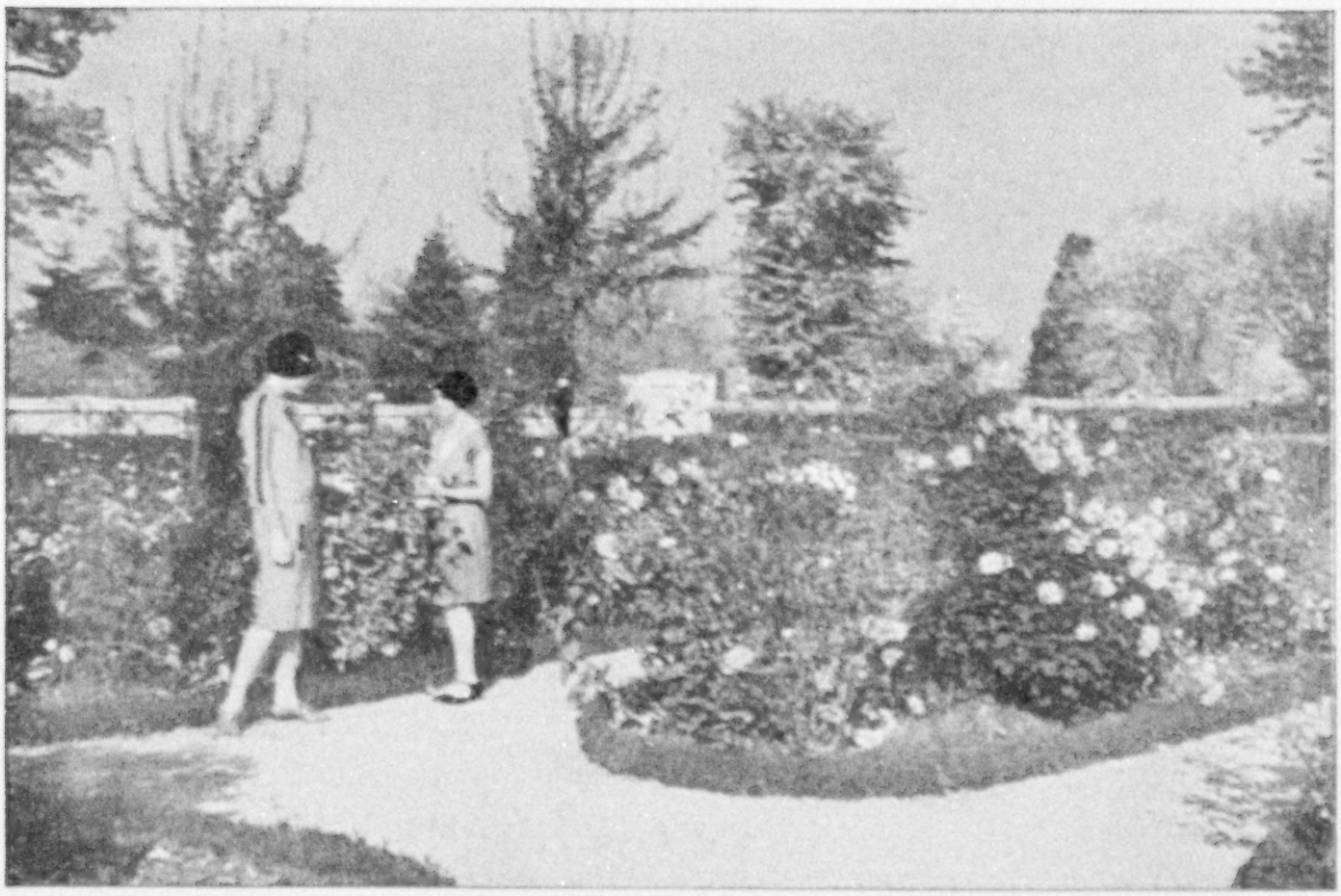
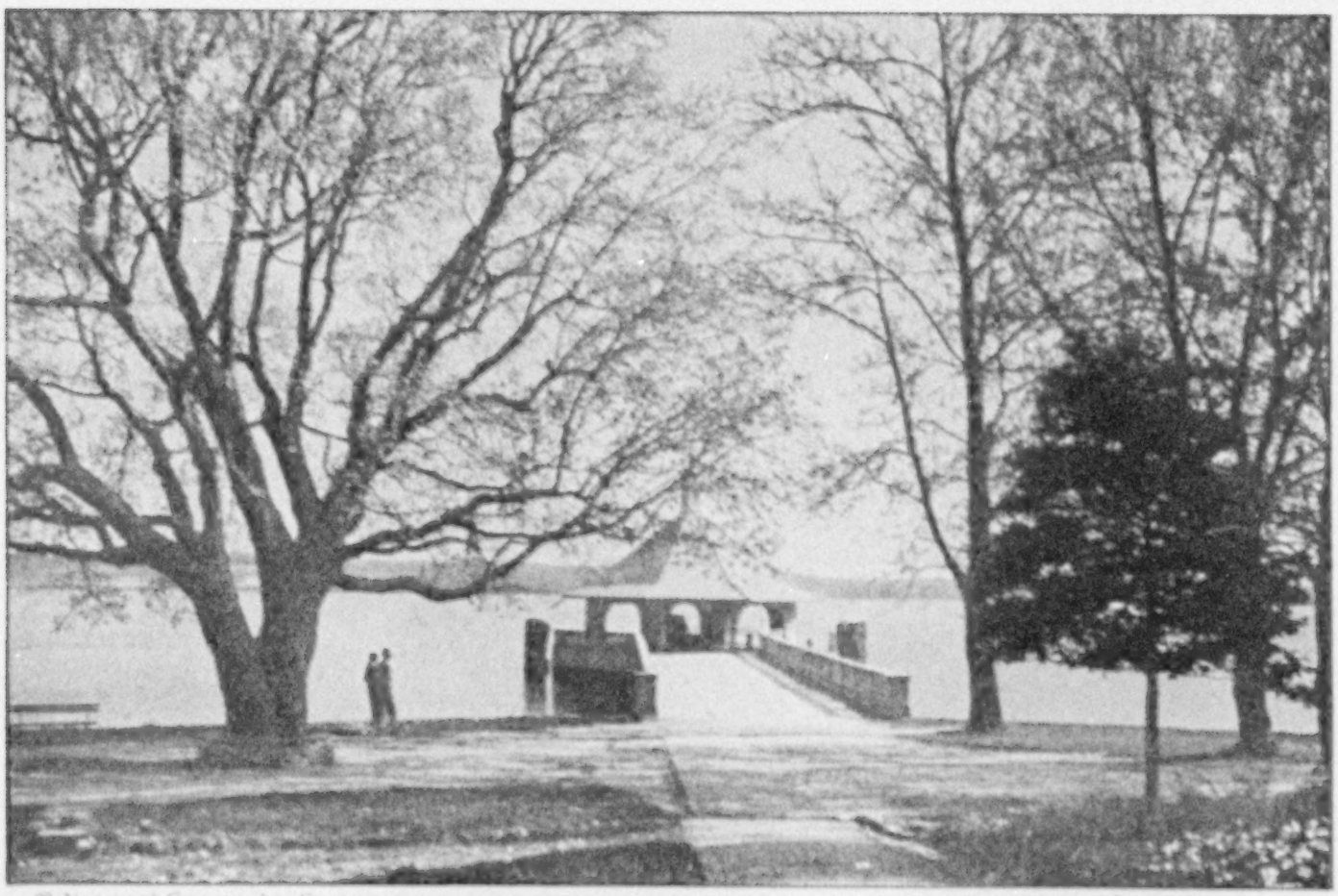
GENERAL WASHINGTON PERSONALLY DESIGNED THESE PARTERRES OF BOXWOOD

Many of the original plants were destroyed by a fire in 1835, but these were replaced by cuttings from the remaining stock and the garden now appears much as it did a century and more ago.



WINDING PATHS INVITE ONE TO WANDER AMONG THE FLOWERS

Many of the plants in the garden at Mount Vernon were imported from England and so solicitous was General Washington of their welfare that he frequently supervised the gardening in person. He also received many shrubs as gifts from friends and admirers.



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WHERE SPRING AND SUMMER PILGRIMS TO AMERICA'S SHRINE DEBARK

A steamer brings visitors from the National Capital down the Potomac to the home and tomb of Washington, and they land at the same spot where he was wont to embark in colonial days.

© National Geographic Society

Autochrome by Clifton Adams

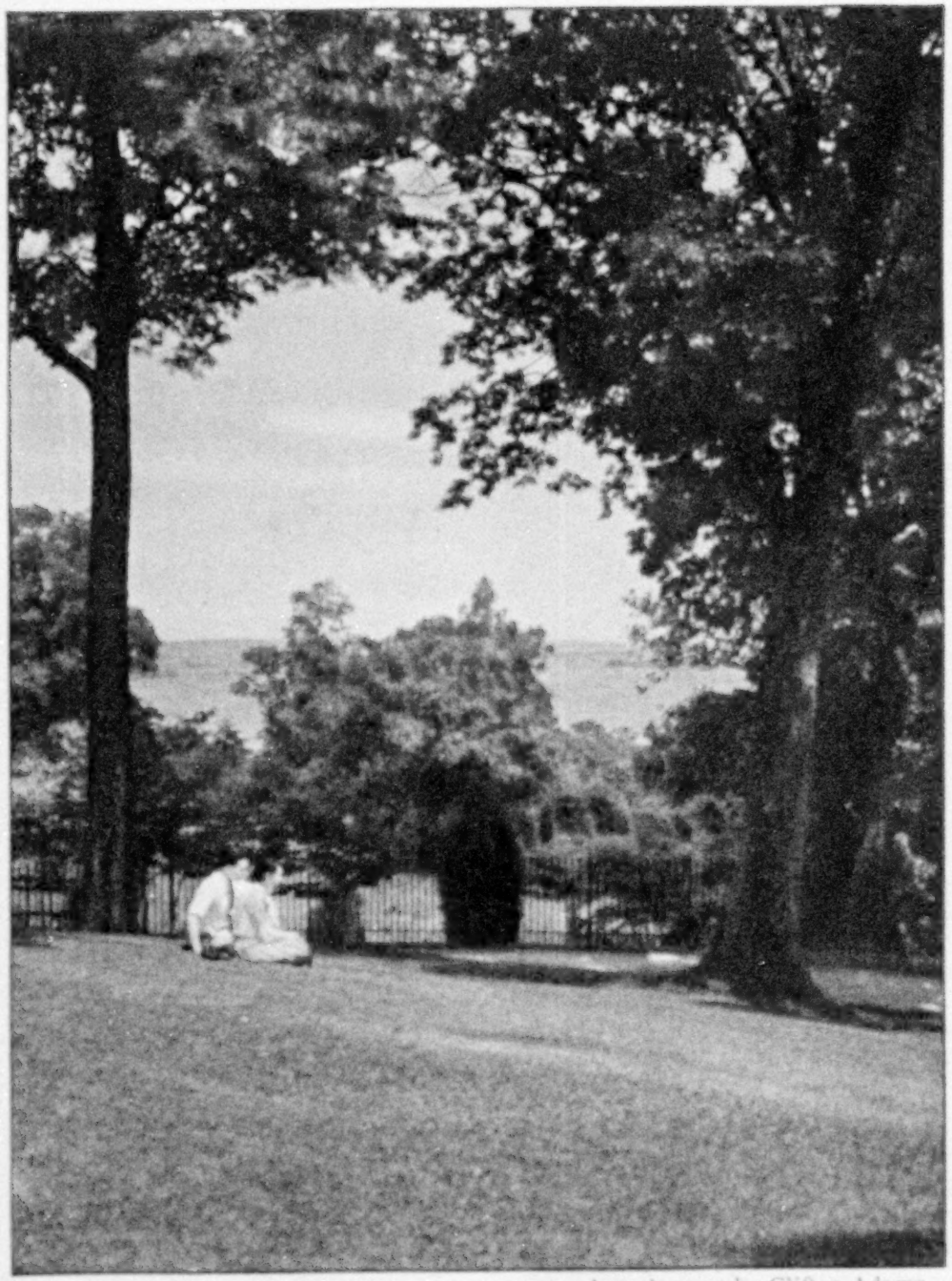
MOUNT VERNON IN WASHINGTON'S DAY WAS A COMMUNITY IN ITSELF

Large plantations were self-contained units, raising practically all the food required, and spinning and weaving much of the cloth used. The master's family purchased clothing in the cities or even direct from England, but itinerant tailors, shoemakers and other artisans traveled from one estate to another making garments and footwear for the servants. At Mount Vernon, most of these traveling craftsmen did their work in the gardener's house, to the left of the mansion. On the other side are the kitchen and butler's house.

© National Geographic Society

THE SUMMERHOUSE OVERLOOKING THE POTOMAC AT MOUNT VERNON

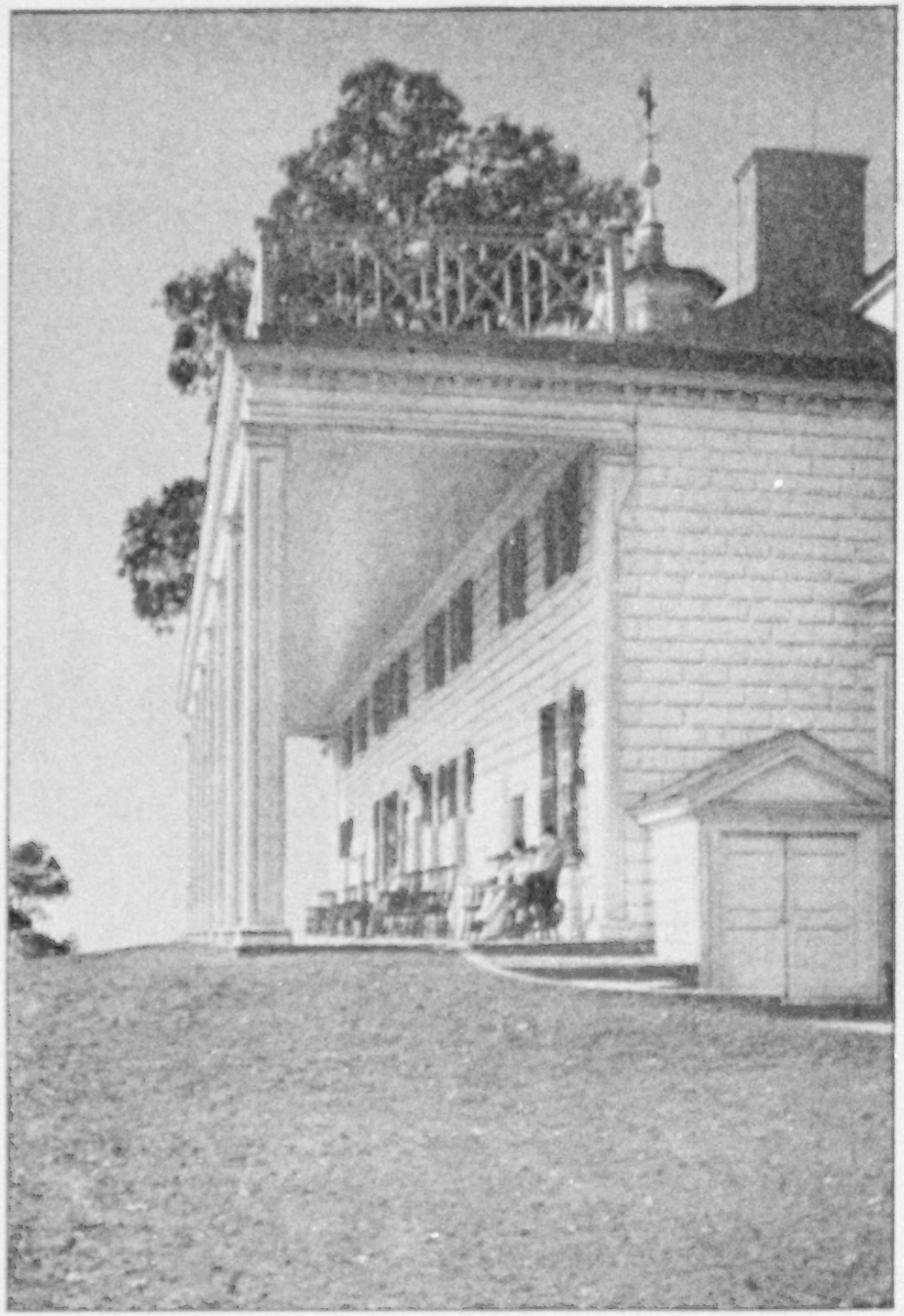
This little rest and beauty spot is a reproduction, built on the foundations of its predecessor, by the school children of Louisiana. It conforms to the original in general line and proportion. In General Washington's time a bell which regulated the hours of labor on the estate hung in the small tower.



Autochromes by Clifton Adams

LOOKING FROM MOUNT VERNON TOWARD FORT WASHINGTON, MARYLAND

The iron fence marks one of the limits of Mount Vernon's deer park, first stocked in 1785. Underground springs were formerly the cause of frequent minor slides and cave-ins along the hillside, but in 1904 this menace was removed by running tunnels into the hill, thus draining off 20,000 gallons of water daily.



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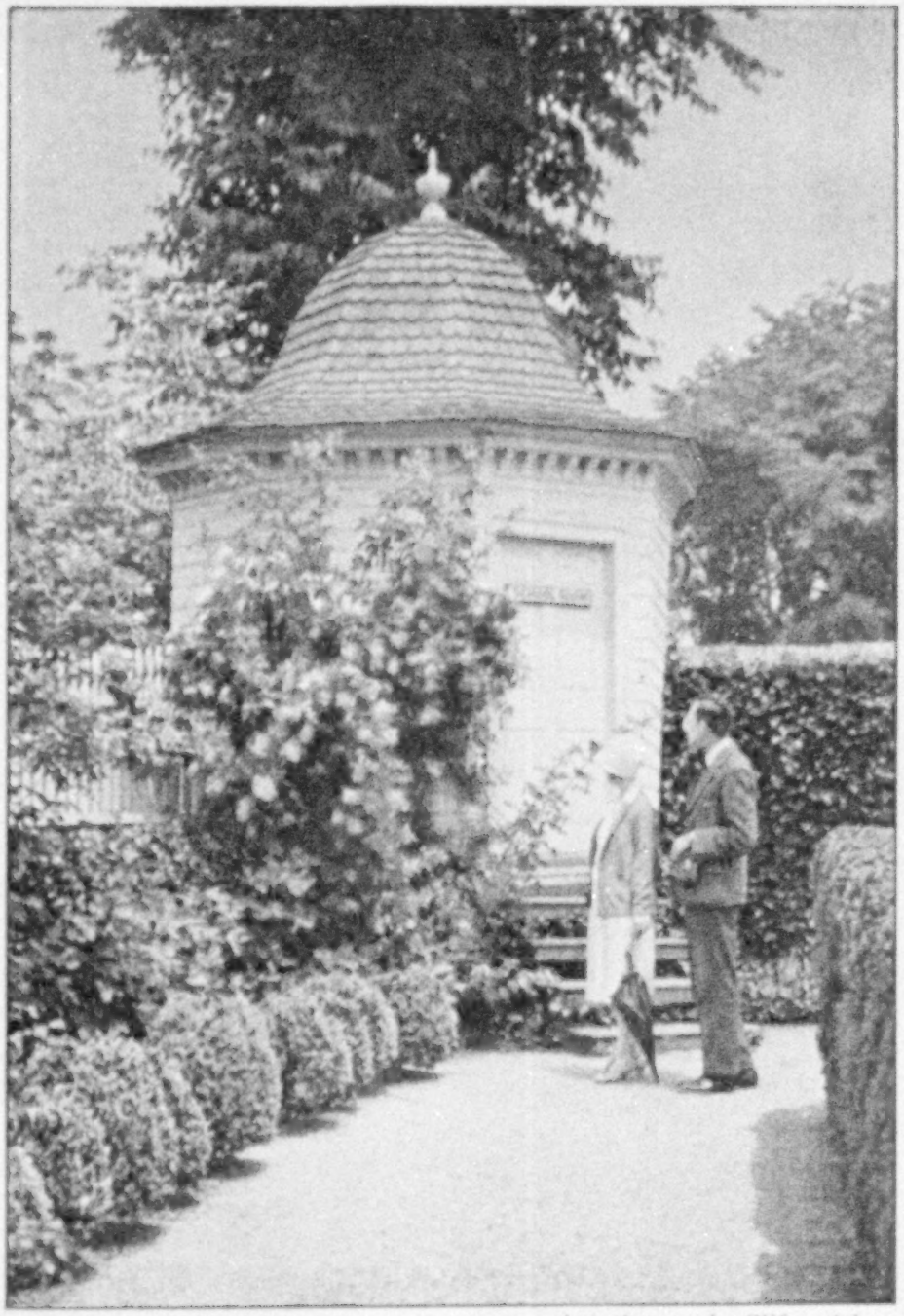
WASHINGTON OFTEN EXERCISED ON THE PORCH

During the winter months, when the roads were impassable, the owner made a practice of pacing up and down this portico for an hour just before retiring.



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A "BUILT-IN" SCHOOLHOUSE

When Mrs. Washington's two grandchildren came to live at Mount Vernon, this little structure, originally built into the garden wall as a seed and tool storeroom, became a schoolroom.

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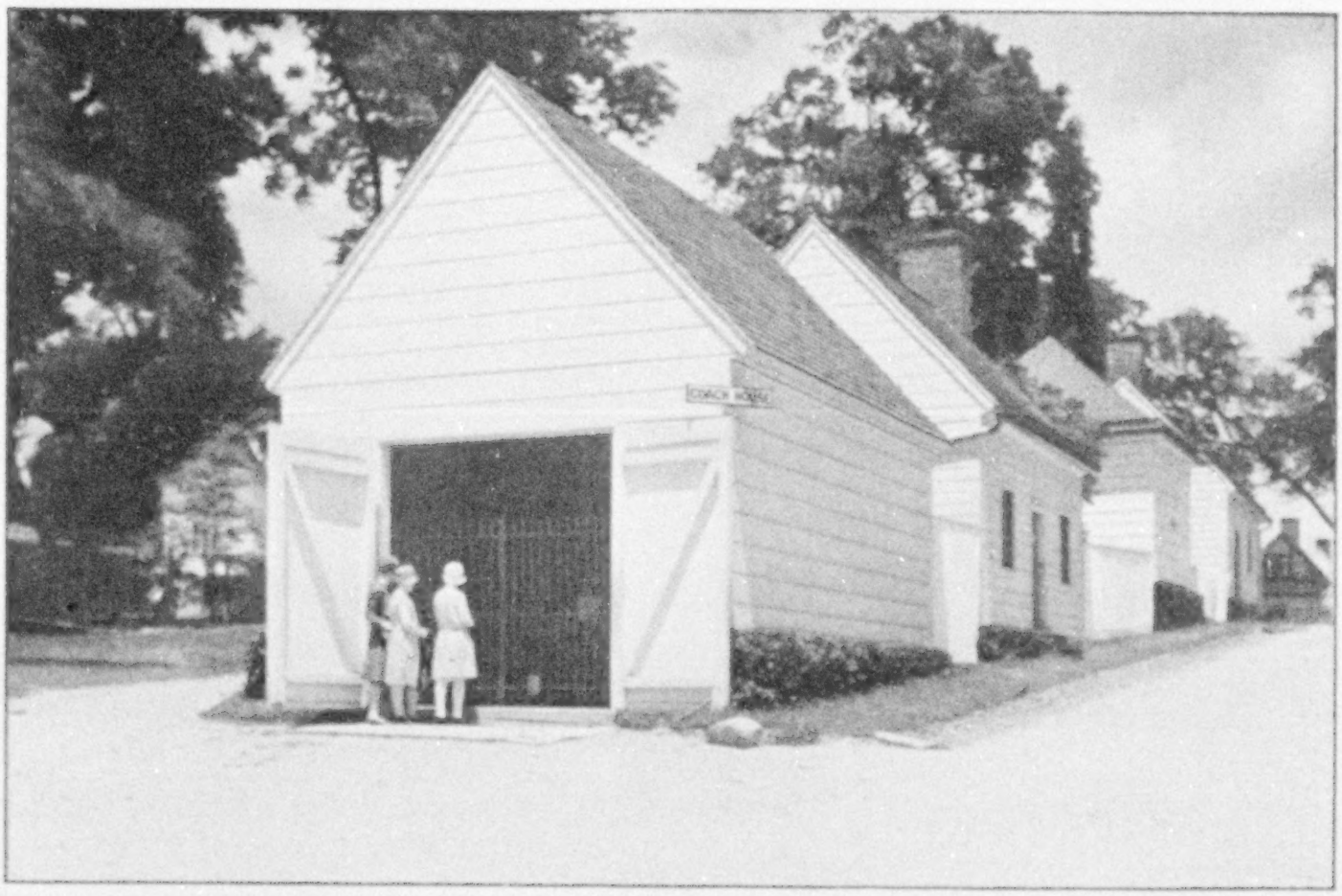
THE GALLANT EQUIPAGE OF MANY A FAMOUS GENTLEMAN HAS TRAVELED THIS ROAD

This is the entrance to the Serpentine Drive, which runs by the front door of the mansion. Man and Nature have joined forces to embellish Washington's home. There is no fairer corner in the Old Dominion.



A REPLICA OF THE ORIGINAL COACH HOUSE

The coach which is kept inside, while similar to General Washington's, did not belong to him, but has been pretty definitely identified as the property of Mr. Samuel Hare Powel, mayor of Philadelphia when that city was the National Capital.

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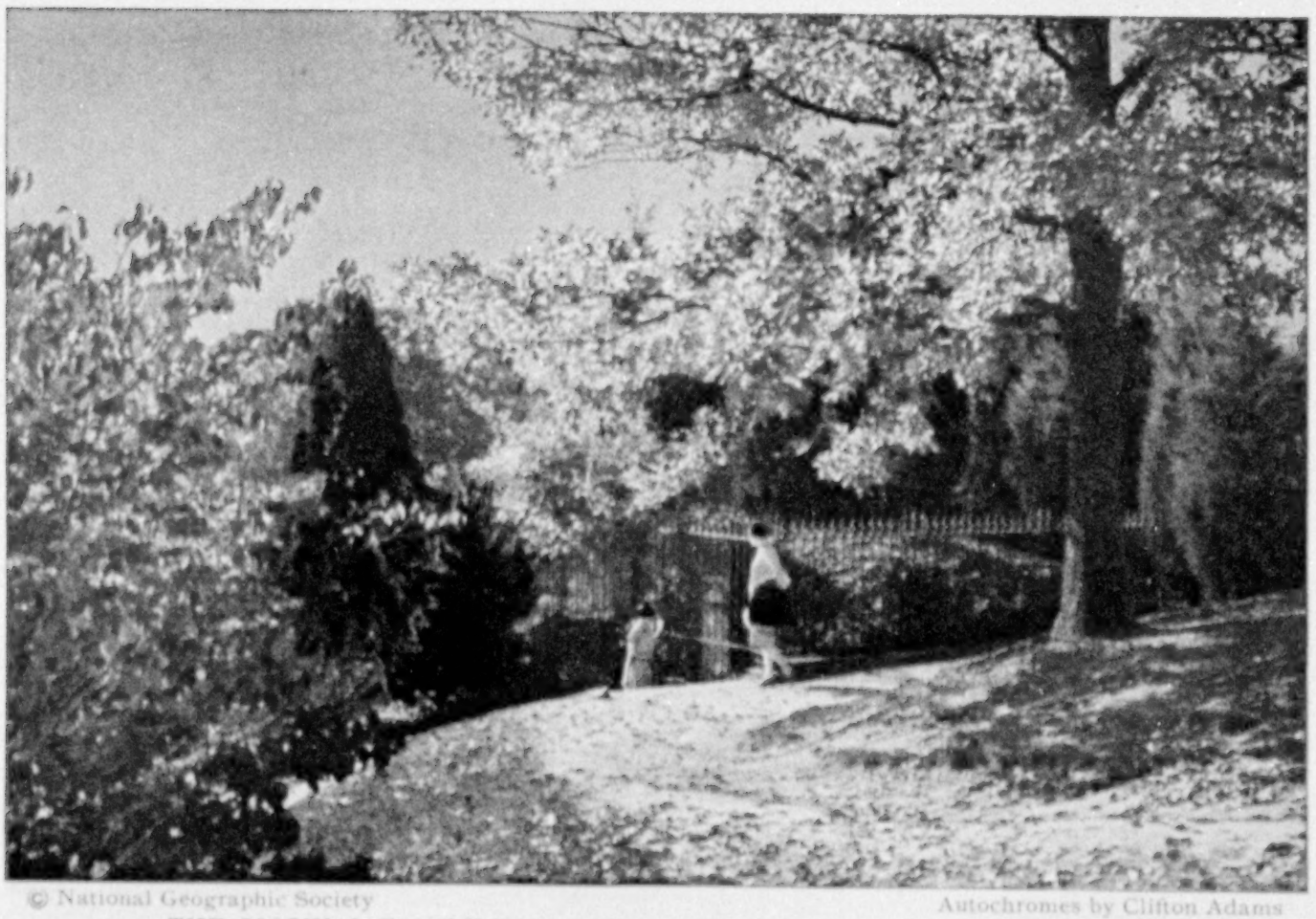
CONTINUOUS BLOOMS DISTINGUISH THIS CORNER OF THE GARDEN

General Washington arranged the planting so that from early spring to late fall there were always flowers in bloom. The little white house was built for architectural effect and later used as a schoolroom (see Color Plate XII).

AN IVY MANTLE EMBOWERS THE TOMB

The remains of George and Martha Washington rest within two marble sarcophagi in the vestibule of the family vault. The monuments to left and right are to Bushrod and John Augustine, nephew and grandnephew, respectively, of George Washington.



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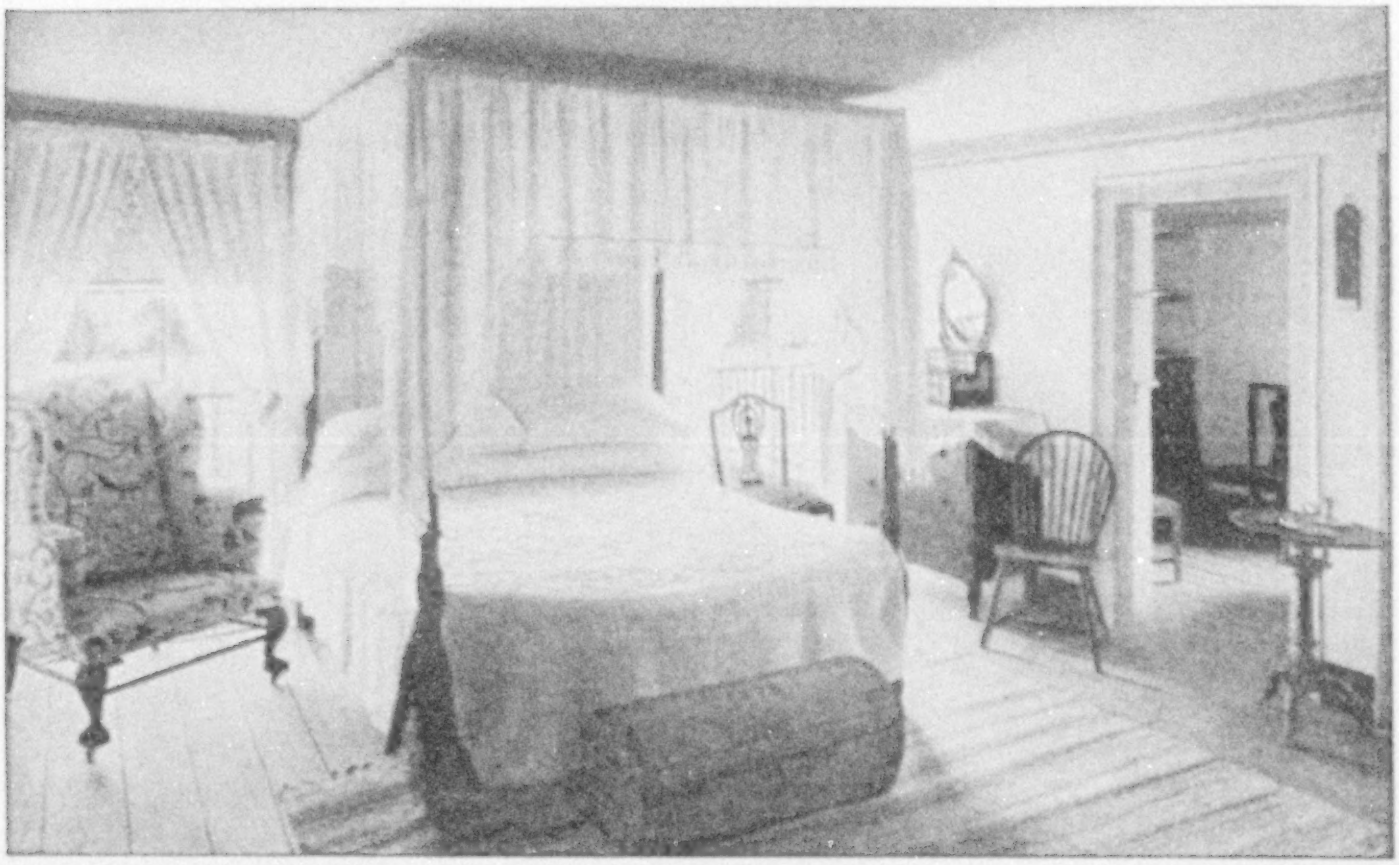
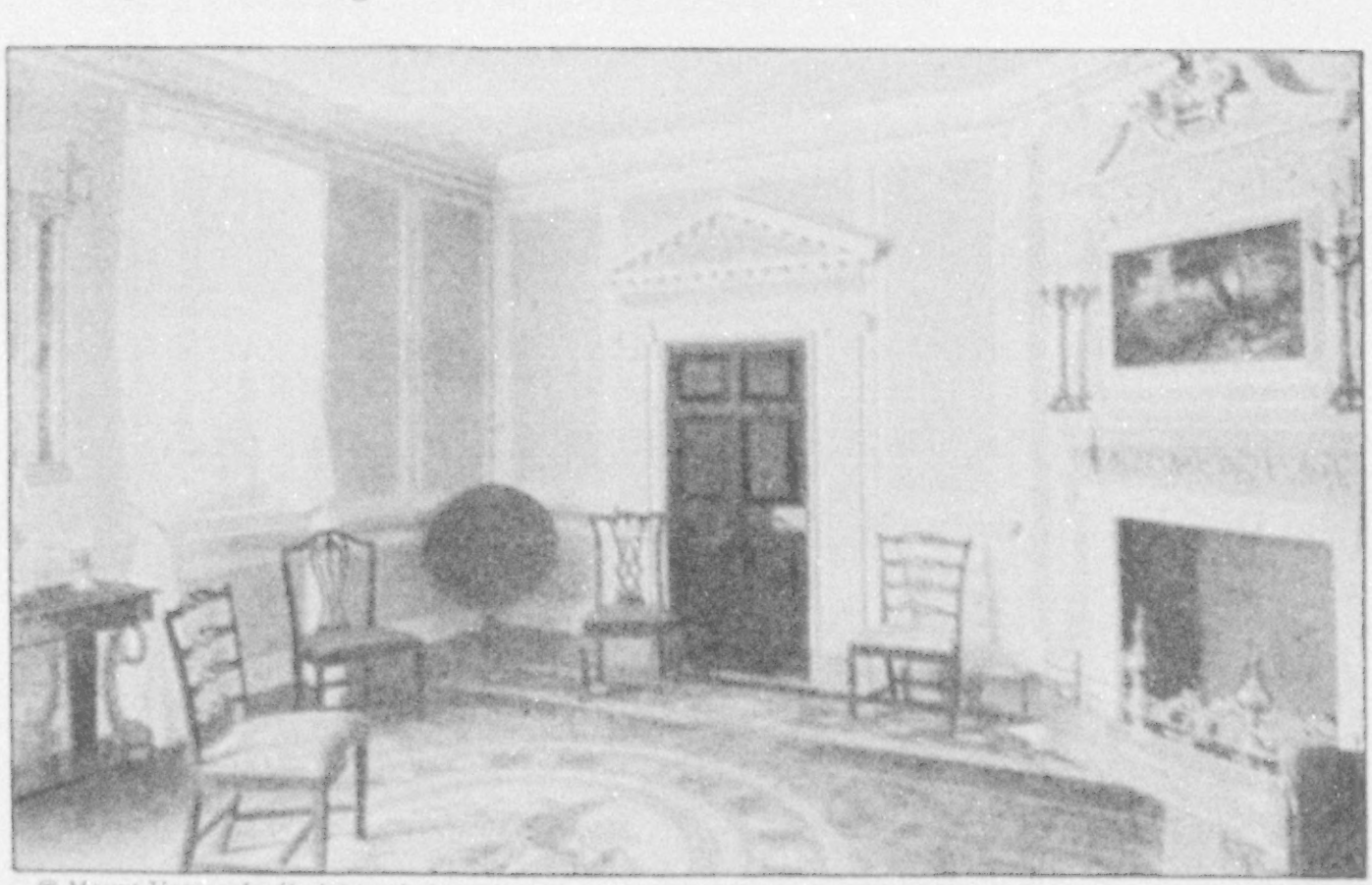
THE ORIGINAL FAMILY VAULT HAS BEEN ABANDONED FOR A CENTURY

In 1830, a dismissed and disgruntled employee broke into this tomb at night and stole what he believed to be the General's skull. He was mistaken, but the attempt aroused the family to the need for a new vault (see above).



IN THIS ROOM WASHINGTON BREATHED HIS LAST

The great four-poster canopied bedstead is the one upon which General Washington succumbed to pneumonia on December 14, 1799. The armchair was his mother's and in it she nursed him. At the right is his dressing room.



© Mount Vernon Ladies' Association

THE RUG IN THE WEST PARLOR WAS A ROYAL GIFT

This floor covering was especially made for General Washington by order of Louis XVI of France, and has the design of the coat of arms of the United States woven in it. However, by a strange train of circumstances, it was never received by him and only after more than a century of adventures did it arrive at the home for which it was intended.

Seed and soil tests were undertaken, as well as stock breeding, and the General engaged in a voluminous correspondence with the leading agricultural experts in Europe. To have achieved the productivity that he did from Mount Vernon's naturally none too fertile acres is a standing tribute to the agricultural genius of Washington the farmer and, together with the many successful experiments he conducted there, justified the use of that title which pleased him most—"The First Farmer of America."

WASTED TIME WAS ABHORRENT TO GENERAL WASHINGTON

General Washington's capacity for the practical application of his advanced agricultural theories was in evidence in the large barn which he built on the Dogue Run Farm. It was a sixteen-sided brick structure, the construction of which he supervised and the plans for which he drew. The bricks for it were baked on the estate, and among its unique features was a circular threshing floor, the boards of which were laid so as to leave regular and frequent interstices, through which the flailed or trodden grain could fall into bins built beneath.

A motive which probably impelled the master of Mount Vernon to include this innovation in his new barn was his abhorrence of wasted time. By providing a good threshing place indoors, he was able to be independent of the weather in preparing his grain and made it unnecessary for his slaves to remain idle because of rain or cold.

It was often difficult for Washington to inculcate his overseers with his progressive ideas. One instance of this difficulty occurred in connection with the use of the new barn and threshing floor, which caused the General to grow wrathy. He had ordered a large part of his wheat stored in the barn for threshing. On returning to the farm after a short absence he found that an overseer had removed the wheat from the barn and had had it trod out in the open only a few yards from the newly designed threshing floor. History does not record the exact events that followed.

For greater convenience, the Mount Vernon estate was divided into five farms, ranging in size from the comparatively small Mansion House Farm to the River Farm of 2,027 acres. On each of these there were slave quarters, an overseer's house, and barns and other outbuildings. On one of them, the Union Farm, there was a brick barn, which Washington described in a letter to Arthur Young in December, 1793, as "equal, perhaps, to any in America, and for conveniences of all sorts, particularly for sheltering and feeding horses, cattle, etc., scarcely to be exceeded anywhere. . . ."

An overseer was in direct charge of each of these farms, but General Washington did not leave the management entirely in their hands. At such times as he was able to be on his estate, he made daily rounds over the whole of it and gave very minute and specific directions. He was a particularly fine horseman, and his giant form astride one of his favorite mounts was a familiar sight in all parts of Mount Vernon, for no feature of its affairs was too insignificant to command his personal attention. When he was away from home he wrote a weekly letter of instructions to his manager and received in return a weekly report.

Even during the trying days of the Revolution he continued the practice, and it was during this period that he supervised, (by post), the enlargement of the mansion.

HOSPITALITY REQUIRES A LARGER HOME

Just before the war General and Mrs. Washington had come to the conclusion that the demands upon them for entertaining would necessitate an enlargement of their residence. Work actually began in the spring of 1775, but before it was more than well started the master was called away to take command of the army. His kinsman, Lund Washington, took over its active direction, but the interior construction work was not completed until 1786, after the General's return. The mansion, as it stood then and as it stands to-day, was of Virginia pine sheathing, designed and painted to resemble stone blocks, and built over a framework of oak. The foundations were of brick and real sandstone; the roof of cypress shingles.

Life at Mount Vernon, prior to the coming of Martha Washington, had not been very regular. The master was frequently away in the army or on survey-

Photograph by Clifton Adams

THOUSANDS VISIT MOUNT VERNON BY BOAT EACH YEAR

A side-wheeler leaves Washington twice daily during the spring and summer months for Mount Vernon. By rail, automobile, and boat, as many as 90,000 pilgrims have visited Mount Vernon in one summer month.

ing trips, and it was not until after his marriage that he settled permanently at his Potomac estate.

MRS. WASHINGTON BROUGHT CHARM TO MOUNT VERNON

Mrs. Washington brought with her all the necessary attributes to make her régime successful. Personal charm and domestic and administrative ability were hers in generous measure, while the large fortune and numerous slaves that accompanied her were also of great importance to the development of the estate.

Now it was that many of the outbuildings began to appear—additional slave quarters, a shoemaker's house, a spinning house, and greater storage facilities.

Practically all the food consumed was raised on the place. The slaves subsisted largely on corn meal, pork, turnips, and a few other vegetables, all of which were home-grown. For the use of the table in the great house, wheat, fruits, sheep, and cattle were raised.

The hospitality at Mount Vernon was bountiful and seldom did the Washington family sit down to dinner alone. Anywhere from one or two to a dozen or more guests were in almost constant attendance—sometimes for a meal only, sometimes for one or more nights' lodging as

well. The latchstring was out to any traveler, and frequently General Washington notes in his diary that a gentleman or lady, whose name was unknown to anyone in the household, dined there.

There was no austerity in the life of the great estate. Dances and games were frequently arranged, and both master and mistress participated in the festivities or frivolities. While General Washington had no children of his own, Mrs. Washington's two children by her first marriage, John and Martha Custis, and later her grandchildren, George Washington Parke Custis and Nellie Custis, lived at Mount Vernon and supplied the notes of youthful gaiety.

Hunting was a favorite diversion. General Washington took keen delight in following the hounds over his broad acres. His diary records many incidents of the chase and also the purchase in London of a complete hunter's costume. He was as determined in his play as in his work, and the fox raised by his pack was very likely to lose its brush. On one occasion, however, the General received more than he bargained for, recording that he "went a hunting and catched a fox and the ague."

Fishing at Mount Vernon was mostly a task for slaves with seines and drags, but occasionally the master and some of his guests would try their hand with hook and line. One of the old slaves was frequently to be seen on the river engaged in snaring perch and bass, or netting shad for his master's table; another retainer was charged with keeping the larder supplied with game, and many a canvasback, mallard, and wild turkey fell before his old flintlock.

PILGRIMS BEGIN TO ARRIVE

The last years of Washington's residence at Mount Vernon saw the beginnings of that steady stream of pilgrims to his home that has continued unabated ever since. He was no longer merely a Virginia country gentleman, but the ex-President of the Republic and a figure of world-wide importance. Prominent men and women from all parts of the Union and from abroad came to Mount Vernon to do him homage. Veterans of his Continental Army came to voice their devotion to their leader. Simple curiosity brought many others. He was gracious and hospitable to all.

Mount Vernon was never a financially profitable undertaking and contributed to Washington's great wealth only in the enhancement in value of its acres. The estate was simply a diversion in the hands of its great master, with the improvement and management of which he refreshed himself from the cares of public life. However, as he grew older the establishment became burdensome and at one time he seriously considered leasing all of it except the Mansion House Farm, which, in his own words, he intended "reserving for my own residence, occupation, and amusement in agriculture."

DEATH COMES SUDDENLY

While making his usual daily ride around the farms on Thursday, the 12th of December, 1799, he was caught in a sudden storm of sleet and snow, which turned to cold rain as he rode home. He did not deem it necessary to change his clothes on arriving at the mansion, and apparently suffered no ill effects the next day, for on Friday he marked out a number of trees between the house and river that he wished felled to improve the view. There was slushy snow on the ground, and that evening he appeared to be contracting a cold, but refused to take any remedy. He became ill during the night and died the following evening (Saturday, December 14, 1799) shortly after 10 o'clock. With such simple ceremony as he would have wished, his remains were consigned to the tomb which he himself had built.

Under the terms of his will Mrs. Washington remained in possession of Mount Vernon until her death. She closed the General's bedchamber and thereafter occupied what had previously been a storeroom, just above it, but from the window of which she could see her husband's tomb.

A story has long been circulated to the effect that Mrs. Washington closeted herself there and denied audience or entrance to all save her maid and her cat. For the convenience of the latter she is said to have caused a hole to be cut at the bottom of the door, so that it might pass in and out at will. But, like many other legends concerning Mount Vernon, this

Photograph by Maynard Owen Williams

MAJESTIC CEDARS FLANK THIS PILGRIM PATH TO THE TOMB

The visitors to Mount Vernon's hallowed precincts include representatives of every creed, color, and clime. It is not uncommon for half a hundred floral tributes to be placed at the tomb in the course of a year. In many instances these come from foreign visitors, for royalty or other persons of distinction from abroad seldom fail to pay their respects to the memory of the First American.

one has no foundation in fact. A hole was in the door, but it was made for a cat that lived long after Martha Washington died, and the room had been again converted into a storage place. And the purpose of thus humoring tabby was to keep down the mice.

A COSTLY HOME TO MAINTAIN

Less than three years after General Washington's death his wife was laid to rest in the tomb beside him, and Bushrod Washington, his favorite nephew, became the master of Mount Vernon and maintained an unostentatious but graceful hospitality there for 27 years. He bequeathed the estate to his nephew, John Augustine, who died two years later, leaving it to his widow, from whom it passed to their eldest son, John Augustine Washington, the last private owner.

The upkeep of the estate proved a heavy drain on the financial resources of those who succeeded its great owner. General Washington himself had ample means to maintain it, despite its extensive and unfertile acres, but his large fortune was so divided among his relatives that none of them was made rich by it. As a result, the place fell into a lamentable state of

Photograph by Clifton Adams

FROM THIS SIDE WASHINGTON'S VISITORS APPROACHED

The large door at the center of the mansion still bears its original brass knocker. The sundial, posts, and chains are all restorations of features marking the estate in the days of Washington's occupancy. Through the colonnade at the right one may glimpse the waters of the Potomac.

disrepair and was faced with utter ruin, when Miss Ann Pamela Cunningham appeared as a ministering angel to save it.

The story of this remarkable woman's patriotism and courage in the face of almost hopeless odds is inspiring.

It was Miss Cunningham's mother who first suggested the organization that became the Mount Vernon Ladies' Association. As she passed up the Potomac one moonlight night in 1853, she was impressed and saddened by the neglect and desolation that marked the home and tomb of Washington.

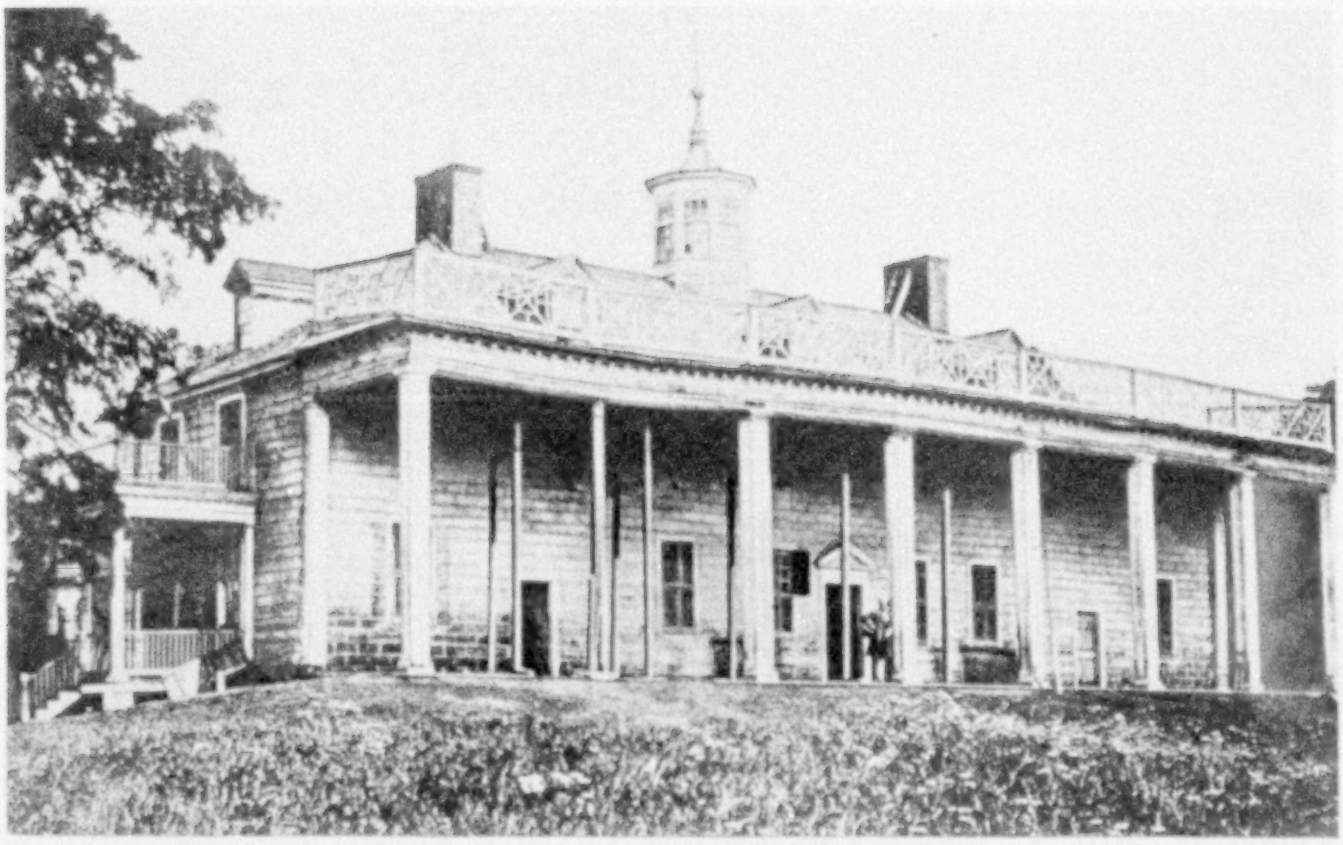
In a letter to her daughter she suggested the idea that the women of America should save Mount Vernon. Miss Cunningham, a semi-invalid, determined to convert the idea into a reality. Her friends and relatives tried in vain to dissuade the fragile crusader from what seemed an impossible task, but she was not to be turned from her labor of love.

She began her campaign by addressing to the "Women of America," through the press, a stirring appeal to make a united effort to preserve the home of Washington as a national shrine. This was 75 years ago, when women seldom interested themselves in anything outside of home and church circles; so she signed her appeal not with her own name, but simply as "The Southern Matron."

THE WOMEN OF AMERICA SAVED WASHINGTON'S HOME FROM RUIN

The Mount Vernon Ladies' Association was organized in 1853 and its founder wrote: "The intention was simply to raise $200,000; give it to Virginia, to hold title and to purchase 200 acres of the Mount Vernon property, including the Mansion and Tomb—Virginia to keep it for a public resort. The ladies to have it in charge and adorn it if they could have the means."

The movement received support from all parts of the country, and Miss Cunningham appointed vice-regents for each State in the Union, vesting them with full power to raise funds for the work. In 1856 she enlisted Mr. Everett's silver



© Leet Brothers

DECREPIT MOUNT VERNON AS IT APPEARED 69 YEARS AGO, WHEN ACQUIRED BY THE LADIES' ASSOCIATION

tongue in behalf of the Association, and that gifted orator raised more than $69,000. In 1859 the possession of Mount Vernon passed from Mr. John Augustine Washington, great-grandnephew of the General, to "The Mount Vernon Ladies' Association of the Union."

The Civil War delayed the work of rehabilitation, but nothing could daunt the spirit of the Regent, and shortly after the close of the struggle she was again actively at work.

Soldiers of North and South had alike respected Mount Vernon during the course of the fratricidal conflict that so scarred other parts of Virginia.

THE COLONIAL ATMOSPHERE IS PERMANENTLY PRESERVED AT THIS NATIONAL SHRINE

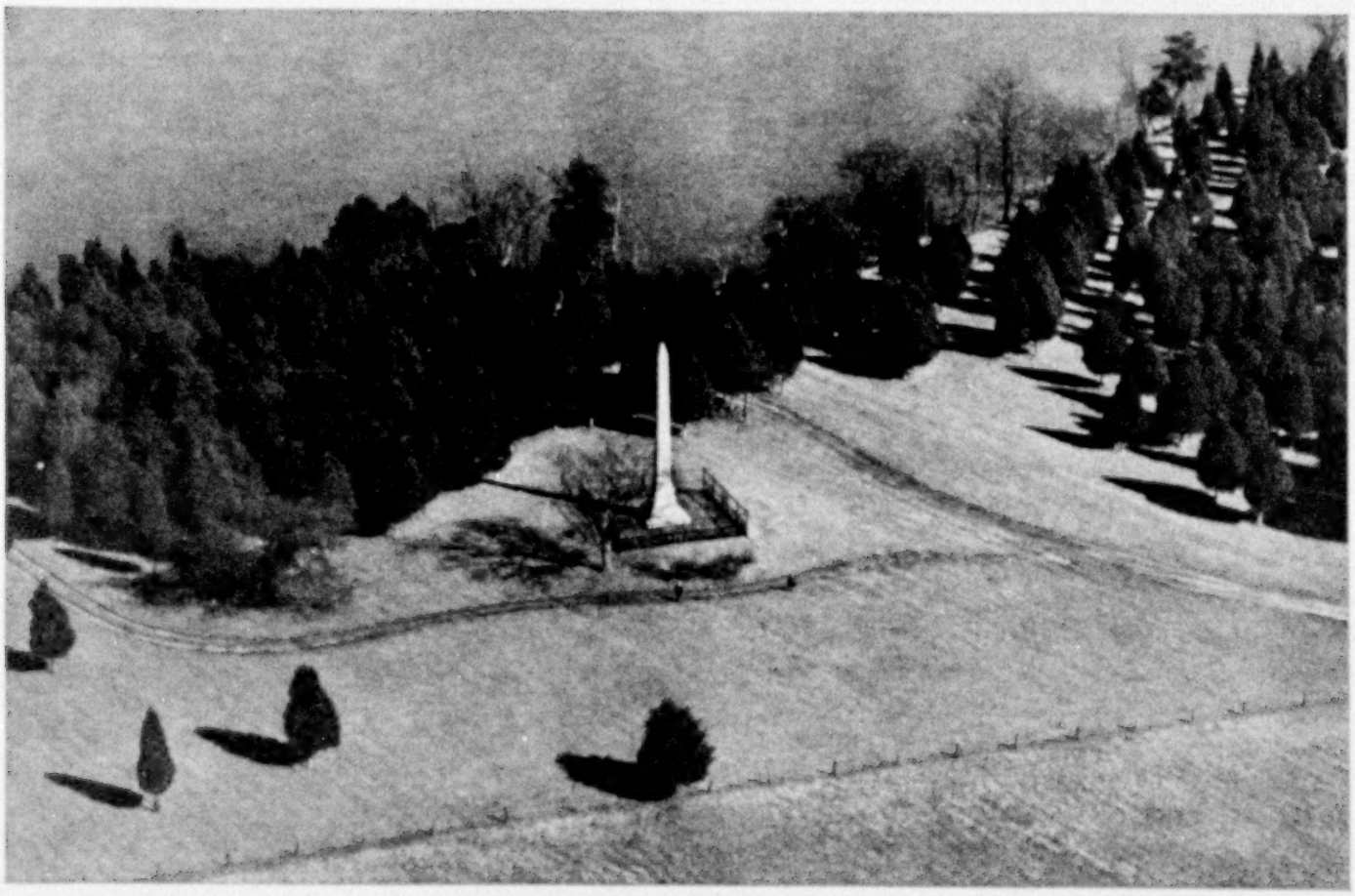
At the commencement of the war the Government had seized the little steamer which the Association used to carry visitors down the river from Washington. Several years after peace was restored, and largely due to Miss Cunningham's efforts, a $7,000 indemnity was paid for this seizure, and the money was used to start the work of renovation and reconstruction.

"The Southern Matron" resigned the Regency of the Association in 1874, and in her farewell address to her associates she set forth a policy which has been strictly adhered to by her successors. She said:

"Ladies, the home of Washington is in your charge—see to it that you keep it the home of Washington. Let no irreverent hand change it; no vandal hands desecrate it with the fingers of progress. Those who go to the home in which he lived and died wish to see in what he lived and died. Let one spot in this grand country of ours be saved from change. Upon you rests this duty."

How well this charge has been accomplished and this duty performed is apparent in the Mount Vernon of to-day. As nearly as human care and ingenuity can keep it so, it is the home in which Washington lived and died.

The Association is in the paradoxical situation of having made excellent progress—backwards. Careful study and research have revealed much about the mansion and grounds in the heyday of the estate. The landscaping of the grounds and gardens is practically as Washington left it, while the outbuildings, walls, and hedges have been faithfully restored.



LOOKING FROM AN AIRPLANE AT THE MONUMENT MARKING GEORGE WASHINGTON'S BIRTHPLACE

The great soldier and statesman was born at Wakefield, in Westmoreland County, Virginia. In recent years an association has been formed to construct and preserve a replica of the house in which he was born (see text, page 628).

When Mount Vernon became the property of the Ladies' Association it was almost devoid of furnishings, and the task of reassembling the original pieces has been a stupendous one. Under the terms of Mrs. Washington's will they were so distributed that the ensuing century saw them scattered all over the Union. To bring back the large number of authentic relics that are now at Mount Vernon has required diligent effort over a long period of years on the part of the ladies of the Association and others interested in the complete restoration of the old home.

KING LOUIS' RUG A CENTURY LATE

Some of the relics have had particularly interesting and checkered careers. For example, the rug in the west parlor with the coat of arms of the United States woven in its center. This rug was especially made by order of Louis XVI of France and sent to General Washington as a present, at Philadelphia, while he was President. Because of diplomatic considerations, he declined the gift, saying that he could not properly accept it "at this time." Accordingly, the rug was stored at the customhouse in Philadelphia with the intention of again offering it to General Washington when he became once more a private citizen. Through some mistake, it was included among the articles disposed of in a customs sale, and for more than a century passed from one place to another until in 1897 it was finally located by the authorities of Mount Vernon and brought to the home for which it was originally intended (Color Plate XVI).

In one respect only has modernity been tolerated: the Ladies' Association has provided the most up-to-date equipment obtainable to safeguard the buildings and their precious contents from the hazards of fire. It is doubtful if any frame building in the world has a better fire-protection system.

An abundant supply of water is kept in storage tanks, and there are at hand engines capable of forcing it with a pressure equal to that available in the city of Washington. Chemical apparatus is instantly available, and in the frequent tests that

are made never more than two minutes elapses between the sounding of the alarm and the play of both water and chemical streams at any given point.

All the equipment, while so disposed as to be instantly available, is concealed from public view.

Every condition which might contribute accidentally to a conflagration has been eliminated. There are no fires about the mansion or its adjacent buildings, the whole unit being heated by hot water radiation from a subterranean boiler room located 400 feet away. All lighting of the buildings is by a most carefully protected system, which was especially designed by Mr. Thomas A. Edison and installed under his personal direction. In the Mansion itself there is no wiring whatever, and when it is necessary to light it, portable storage batteries are used to supply the power.

The shingle roofs of the buildings are sealed underneath by a packing of rock wool held in position by sheet rock, and in the apex of each structure is a system of piping so arranged that in the event of a fire carbonic acid gas could be released. This, being heavier than air, would travel down through the interstices between the outside sheathing and the plastering of the walls and smother a fire there in its incipiency.

EVERY VISITOR HELPS THE SHRINE

Every visitor to Mount Vernon becomes a supporter of this national shrine by paying a small admission fee. The sum total of these fees, economically administered by the ladies of the Association, who hold the property in trust for the Nation, is sufficient to maintain appropriately the house and grounds and to protect it from spoliation.

A much greater amount of management and labor is involved in keeping Washington's home as he left it than is generally supposed. Sixty-five persons are employed on the premises.

Time was when many of the visitors attempted to carry away everything they could lay hands on; but the souvenir vandal is now disappearing. One selfish individual, when admonished for cutting flowers in the garden, replied defiantly that as she had contributed a dollar to the purchase fund, the place was partly hers, and she would cut as many flowers as she pleased! On the whole, however, visitors accord that whole-hearted respect and veneration that is due the memory of Washington.

BIRTHPLACE TO BE RESTORED ALSO

Within the last few years a movement has been started to restore Washington's birthplace at Wakefield, Virginia. The house in which he was born was destroyed by fire in 1780, but the Wakefield National Memorial Association is raising funds by public subscription to rebuild it on the original site (see illustration, page 627). Exhaustive research and a careful survey of the ruins have revealed much information about the structure of the house, and the officers of this patriotic association hope to have a replica ready for dedication on February 22, 1932, the bi-centennial of Washington's birth.

Among the most interesting features of the estate to the hundreds of thousands who annually make the pilgrimage to Mount Vernon are the venerable attendants at the tomb, who long ago learned that the impression they made on visitors was in direct ratio to their proclaimed length of service. As a matter of fact, none of them has been many years at the post, but one who does not proclaim himself a son or grandson of the original guardian is afflicted with a stunted imagination. Not so many years ago there was one dusky individual who claimed to have served the General in person!

No finer thrill of patriotism, no greater sense of pride and pleasure in being an American citizen, can be experienced than when one treads the sacred ground of Mount Vernon. Here the greatest American spent the happiest days of his life, and here he passed to the Great Beyond.

Every vessel that passes up and down the Potomac tolls its bell as it glides past this hallowed spot, and the heart of every American beats faster and truer as he does homage at the tomb of the Father of Our Country.

Washington has taken his place in history as one of the immortals; yet it was a very lovable, a very human Washington who lived at Mount Vernon. There, relaxed from the cares of state and of military leadership, he was simply George Washington—genial host, generous neighbor, and affectionate husband.

A VACATION IN A FIFTEENTH CENTURY ENGLISH MANOR HOUSE

By George Alden Sanford

THIS is how it came about. It had become our habit to take our vacations seriously, their function being by complete change of scene and surroundings to restore a feather edge to jaded mentalities.

The vacation list since the World War has included—usually in a furnished house of our own, from which to radiate in all directions—the island of Nantucket; the Rocky Mountains in Colorado; Ilfracombe, north Devonshire, England; Lake Champlain, New York; motoring in Nova Scotia; the Zea Droom (Sea Dream) Cottage, near Alkmaar, Netherlands; Cape Cod, and an English rectory, 39 miles southeast of London, on the Thames.

On our return from this last English vacation two friends suggested that next time we should secure a house sufficiently large to accommodate a family of ten, and to syndicate the expense.

Thus, in due course of time, we found ourselves installed in a quaint old Tudor Manor House on the Thames eight miles below Oxford. The family syndicate consisted of Mr. and Mrs. B., to whom, alas, the fates were unkind, for at the last moment it was decreed that Mr. B. should not leave the purlieus of Broadway; Mr. and Mrs. L. and their charming daughters, most excellent pals; our kinswoman, Mrs. E., and her fine daughter, without whom our holiday could not have been half the success it was, and our own family group of four—ten in all.

DINING IN THE HALL WHERE SHEEP STEALERS WERE FORMERLY HUNG

The old house was a dream of interest; its five Tudor gables, quaintly carved, the front stuccoed in a warm cream color, partly covered with climbing jasmine and nodding roses, welcomed us with rare hospitality, as we slipped down the entrance avenue between clipped yews and found ourselves pulling the bell chain at the mailed oak front door (see page 630).

The oldest part of the house, the banqueting hall, was built in 1480, before Columbus sailed west. The dust of centuries has raised the ground level, so that now one must step down to enter. Here the Lord of the Manor was wont to meet with and dine his retainers, fraternize with them at least during the first course, after which he retired to the withdrawing (drawing) room by the stairs under the minstrel gallery (see illustration, page 632). We can fancy meanwhile musicians in their gallery, with drum, fiddle, and pipe, providing music.

In this room justice was administered, and if the finger locks and man-traps, or the gallows, which the present owner demolished a few years ago, were indications, "it" was coming to the offender found guilty. The Lord of the Manor had absolute power over the lives of his retainers, and he was held responsible by his sovereign for their actions. Sheep stealers were summarily hung, sometimes over the beam which now carries the acetylene chandelier.

The younger members of the family looked for ghosts, but the nearest they came to finding them was a dungeon, which Junior discovered.

The modern part of the house was built in the Elizabethan era. The oak floors, highly polished and slippery, are on different levels, indicating various extensions, and one literally has to watch his step. The house contains a wealth of old furniture, books, tapestries, carvings, pictures, and curios. Indeed, we were wont to write our friends that we were living in a British museum.

The staff of inside servants, six in number, were thoroughly efficient and polite. Indeed, the service and table were as good as in any hotel we know. The gardeners were provided in the rent. The climate is highly favorable to vegetation; showers fall about every ten minutes! In Reading I noted the bronze statue of a member of a well-known firm of biscuit manufacturers, represented in frock coat, top hat, and with an umbrella under his arm.

The Manor gardens occupied, perhaps, 20 acres and were laid out with rare skill, and while not kept up to perfection, they were a continual joy.

Through a pergola, passing a fountain, under giant trees, we enter the wilderness garden, a tangle of beautiful shrubbery,

Photograph from George Alden Sanford

THE MANOR HOUSE OF SUTTON COURTENAY IS BOUND UP WITH MORE THAN FOUR CENTURIES OF HISTORY

Glimpsed through a series of pillared gateways, or from the long, cottage-lined village street running inland from the Thames, this five-gabled architectural achievement leaves an enduring impression on the memory. The Manor was formerly attached to the Abbey of Abingdon, two and a half miles to the north, and was a hospital for the monks in the days of Edward III. The sundial in the foreground is attributed to Inigo Jones, the "English Palladio."

Photograph from George Alden Sanford

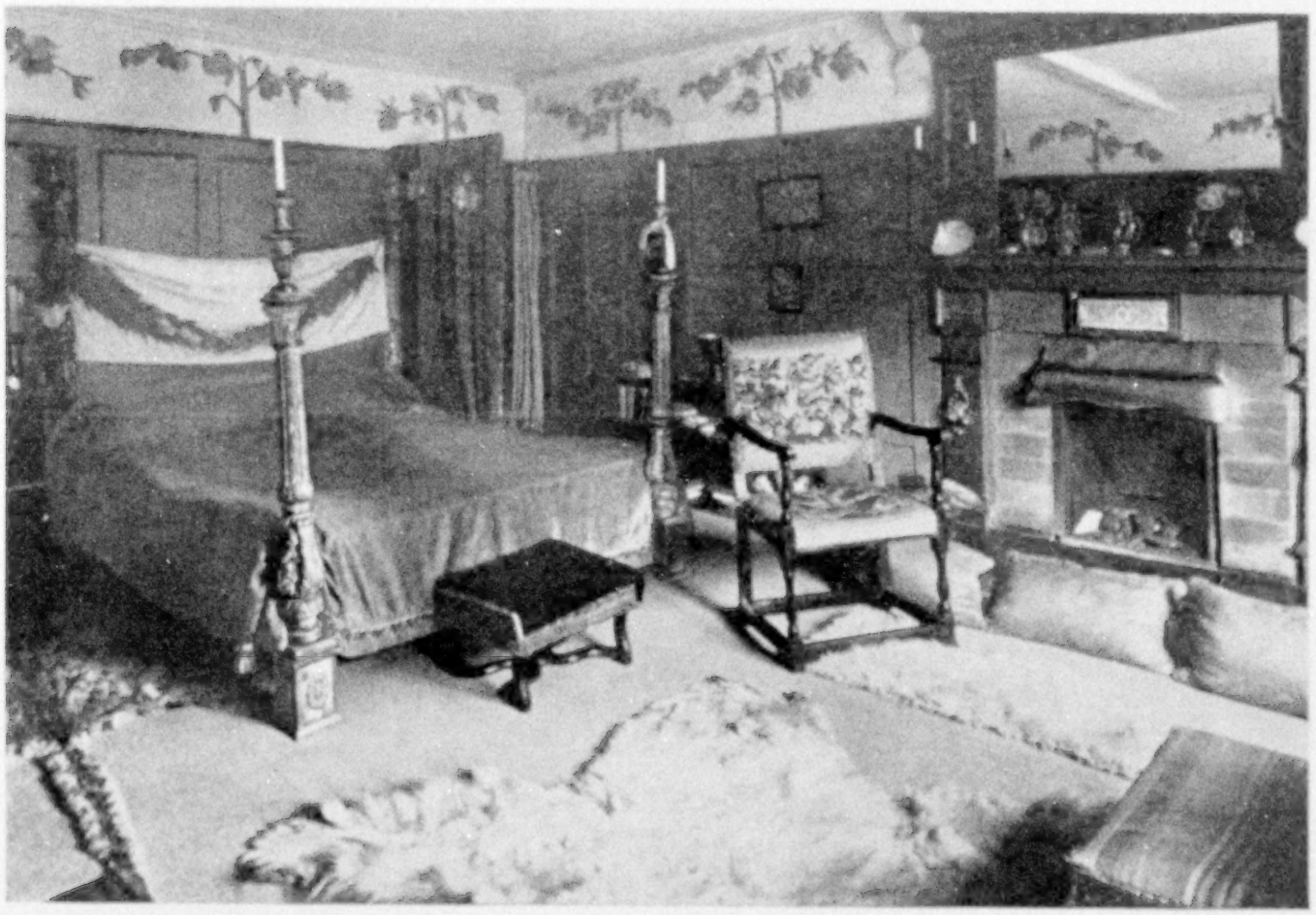
THE "WITHDRAWING" ROOM OF THE LORD OF THE MANOR IS NOW AN EVENING RENDEZVOUS

After he had fraternized with his retainers at least during the first course of dinner in the banqueting hall (see page 632), the Lord of the Manor retired to this room by the stairs under the minstrel gallery. Here, also, the modern vacationists congregated of an evening around a piano or exchanged experiences and impressions before a blazing fire.

Photograph from George Alden Sanford

THE BANQUETING HALL AT SUTTON COURTENAY WAS BUILT BEFORE COLUMBUS SAILED WEST

Here the Lord of the Manor met and dined with his retainers, while the musicians in the gallery at the back fiddled, drummed, and piped. This was also a hall of justice, and sheep stealers were sometimes hung from the beam which now holds the chandelier. At the top is the barrack-room window. Under the gallery are stairs leading to the drawing-room (see, also, page 631).



Photograph from George Alden Sanford

THE BEDROOM OF THE MISTRESS OF THE MANOR

through which grass paths lead in and out to beauty spots, heading up to a vantage point where there was a settee—a standing, or rather a sitting, invitation to tarry.

Next came the Italian sunken garden, with statuary, fountain, flowers, and, at a vantage point, the inevitable tea table and settee. The entrance drive came next, between rows of clipped yews flanked by ribbon beds of red and white annuals, all shut off from the gardens by trellises covered by many varieties of clematis.

IN THE SHADOW OF YEWS 800 YEARS OLD

Down this avenue, between graceful great stone columns, one "pops" into the circle before the house, around an ancient sundial, and is at the front entrance.

Just south of the front door were four enormous yew trees, 800 years old, the owner said. The wide-spreading branches would have been lying on the ground had they not been propped up. Under these trees I could stay indefinitely, studying the birds which gathered to feast on the yellow, waxy, yew berries (see page 634).

Next came the "well" garden, inclosed in a beautiful hedge, with its old Roman marble wellhead. As this was for decoration only, dark red roses were trained over the chains and iron frames.

In this garden many varieties of annuals grew and tile walks led up to the settee. Here blackbirds and thrushes entirely cleaned up our pears in two days.

Through fine old wrought-iron gates we enter the "long" garden, covering, perhaps, three acres. Fantastically clipped yews, classical urns, statues, and a variety of annuals made this the finest of the flower gardens.

From the interior of the Manor House is a vista through the south hall down the length of the long garden, with a circular fountain midway. In late August I counted 79 flower families in bloom here

Through a low arch in the hedge one enters the Persian garden, a formal affair, with fountains and arches in which monthly roses grow between borders of blue mints.

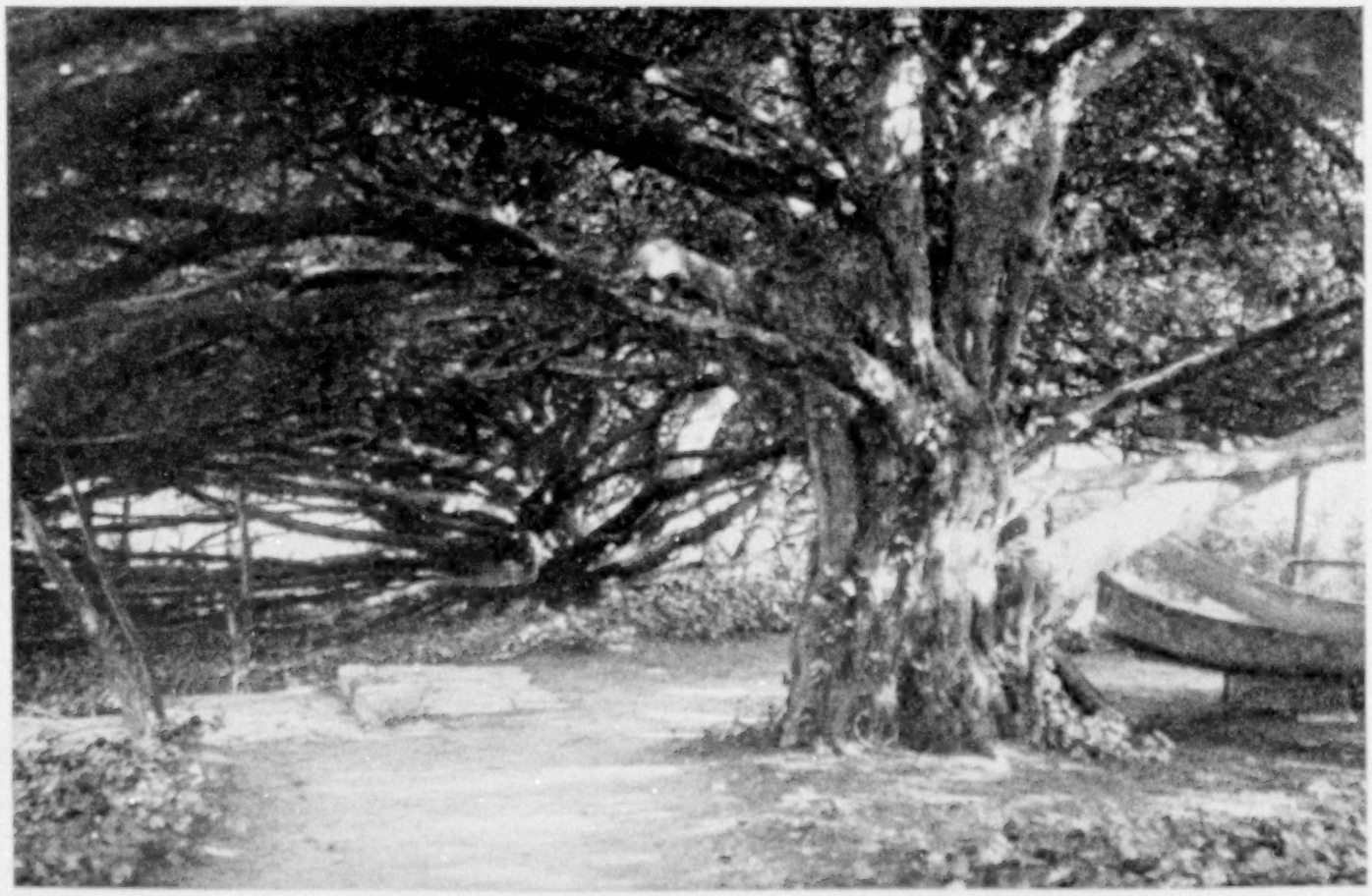
BOWLING GREEN AND TENNIS COURTS

A fine iron grill leads in to the bowling green, where one of the favorite English lawn games is played. The gardener told me that Sir Francis Drake was playing this game when the approach of the Spanish Armada was reported. "But he stayed to finish the game," the gardener added, "before he attended to the Spaniards."

Next came the lily walk inclosed in

ONE END OF THE LONG GARDEN

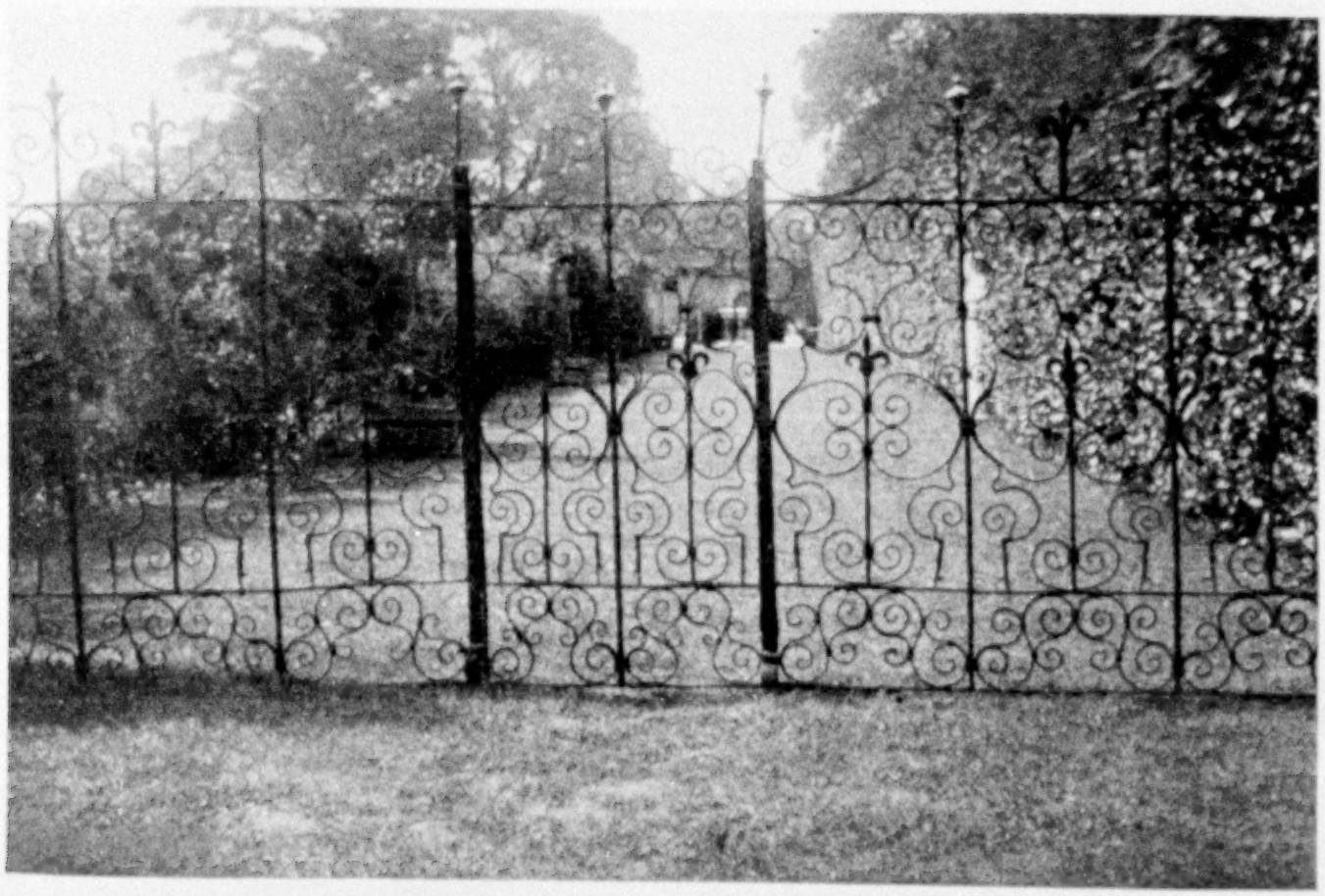
Yews fantastically clipped, statues, vases, classical urns, and especially its profusion of annuals, made this three-acre garden a continual source of delight.



Photographs from George Alden Sanford

THESE YEW TREES ARE OLDER THAN MAGNA CHARTA

The wide-spreading branches of these 800-year-old trees are so long and heavy as to touch the ground unless propped up. It was John Evelyn who pointed out the possibilities of the cut and clipped yew for ornamentation purposes, and many grotesque and geometrical forms now adorn English gardens. To Englishmen of old the yew held an important place in folklore, and also provided tough wood for the famous English bow, which overthrew the armored knights of feudalism at Poitiers in 1356.



Photograph from George Alden Sanford

THE IRON SCREEN OF THE BOWLING GREEN

After tea, many an English country gentleman still enjoys his game of bowls. Archery excepted, this is the oldest English outdoor sport which has held a certain degree of popularity since the 13th century.

hornbeam hedges. At the height of the season we could have gathered 500 madonna lilies with plenty left over.

The splendid tennis courts came next. They were always the rendezvous of the young people. The broom walk led up to the Japanese garden, at the head of which was a thatched oak summerhouse. A causeway over a canal from the Thames, a pagoda, and bronze figures were among the attractions of this garden.

Then the river garden, given over to aquatic plants. Next the rose gardens, with perhaps ten thousand blooms when we arrived; indeed, the air was heavy with their perfume.

In the twilight, which meant up until 9:30 p. m., the river was gay with brightly dressed young people in skiffs, canoes, punts, and other craft, some carrying portable phonographs, for "canned" music is a popular feature of river sport. We had our own boathouse and swimming dock. The water of the river is clear and clean.*

Life at the Manor, while not exciting, was delightful. Lovely walks abound and one soon acquires the walking habit. Some of the family walked daily to Abingdon, a most interesting old ecclesiastical town, two and a half miles distant; some to Oxford, eight miles away. Interesting villages lie in almost every direction, and we found the utmost courtesy everywhere.

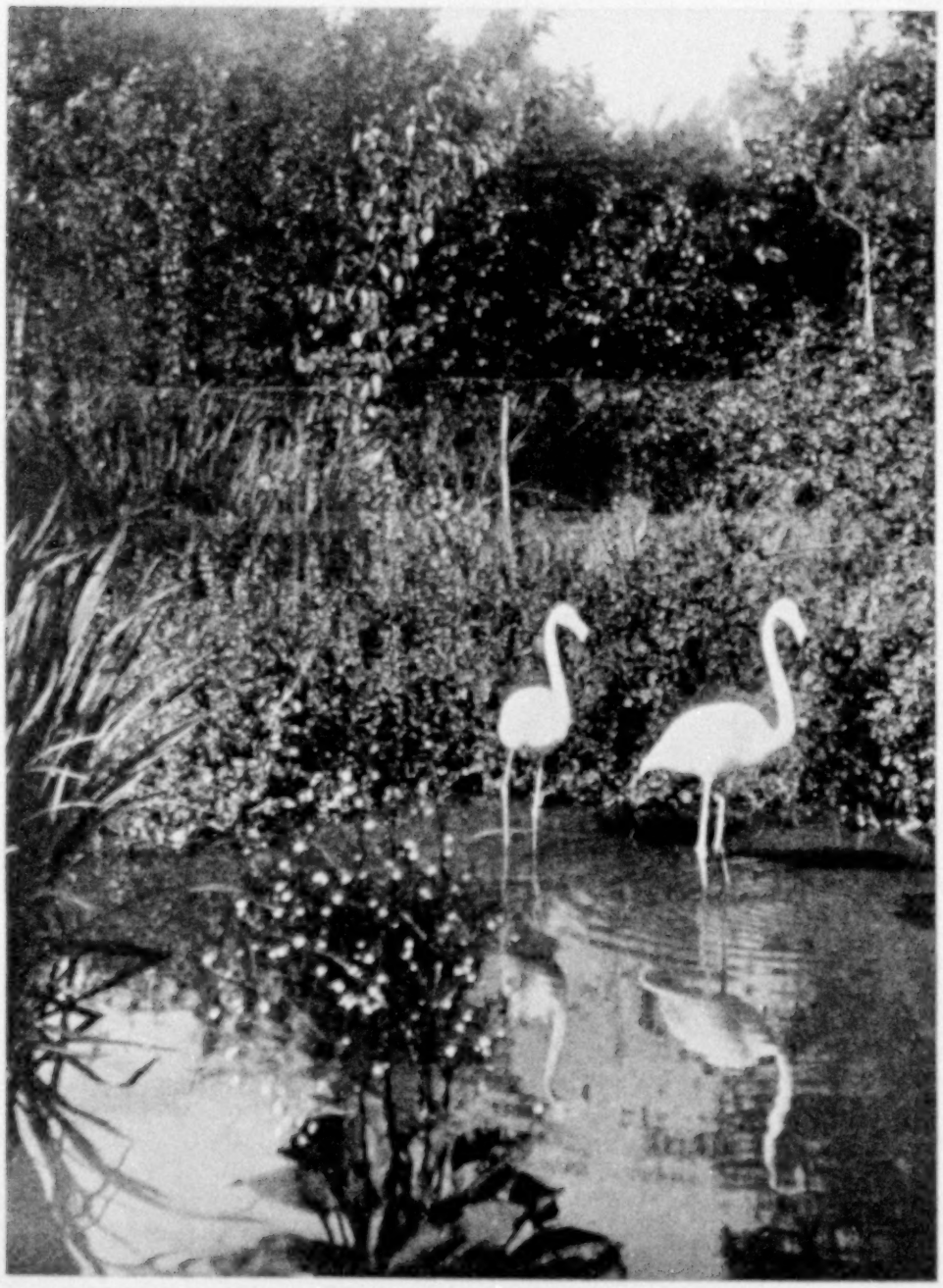
RYE AND CANTERBURY ARE LURES

There was Willie, our car, the meter of which showed nearly 4,000 miles on those perfect roads, and their succession of delights, architectural and historical. We joined the pilgrims to go to Canterbury and wended our way there via motor, as would have astonished our predecessors "the knighte, the millere, the reeve, the prioress," *et al.*

If architecture is frozen music, Canterbury Cathedral is a symphony. We love it best of all the English cathedrals.

The towns by the wayside are fascinating. For instance, Rye, left high and dry by the receding sea, itself one of the old Cinque Ports, quaint and medieval. The narrow streets wind up, like threads of a screw, to the summit, where stands the attractive church; angels come out and

* See, also, "Through the Heart of England in a Canadian Canoe," by R. J. Evans, in the NATIONAL GEOGRAPHIC MAGAZINE for May, 1922.



Photograph from George Alden Sanford

FLAMINGOS IN THE RIVER GARDEN

Given over to aquatic plants, the river garden is a unique feature of the 20 acres of gardens surrounding the Manor.

strike the hours, while the long, gilded clock pendulum swings in the open church to remind the people that time flies.

Oxford is a magnet. While its numerous colleges are fascinating, I can only think of those great men who were here trained to make an impact on the world.

We rode to Devon, to Lincoln, to Cornwall—east, west, north, south we went, always reveling in scenery and memories.

In the Dukeries we were fortunate in securing entrée to Clumber House, as the Duke of Newcastle was not then in residence. Our greatest art galleries have nothing finer than the contents of this sumptuous home, much of the furnishings and art the gifts of kings. We incidental travelers were permitted to see and enjoy this wonderful place just because the owner, like many Englishmen, is a man with a democratic heart.

In every city or town there is a War Cross. From the great Cenotaph near Trafalgar Square, in London, where a hundred thousand men pass daily with uncovered heads, to the tiniest hamlet, all have been stricken. In Little Wittenham, a village of a dozen houses, we read on the War Cross, "To the glory of God and in memory of Charles Young, of this village, who died in defense of his country, and to all the soldiers of Great Britain who laid down their lives, this memorial is erected."

In Paddington Station, London, there is a bronze "Tommy" inscribed to the memory of 27,000 employees of the Great Western Railway who fought, more than 10 per cent of whom never came back.

There was London,* a wilderness of interest, only an hour distant by express.

But, like all things, our vacation passed far too quickly and happily away; so let us close this story in the long English twilight, walking through the gardens heavy with perfume. The rooks across the way in the ancient abbey grounds are talking sleepily. The heavy front door is closed, but a pull of the chain gives us admission, and we proceed to the brightly lighted drawing-room with a fire on the hearth, the young people about the grand piano. Thus we love to remember this vacation.

As a matter of mundane interest, I may say that the cost was about seven dollars a day per person, transatlantic crossings not included.

* See, also, "London from a Bus Top," by Herbert Corey, in the NATIONAL GEOGRAPHIC MAGAZINE for May, 1926.

VEGETABLE SOUP

by Campbell's famous chefs~

LOOK FOR THE RED-AND-WHITE LABEL

SOUP

and the roses in your cheeks

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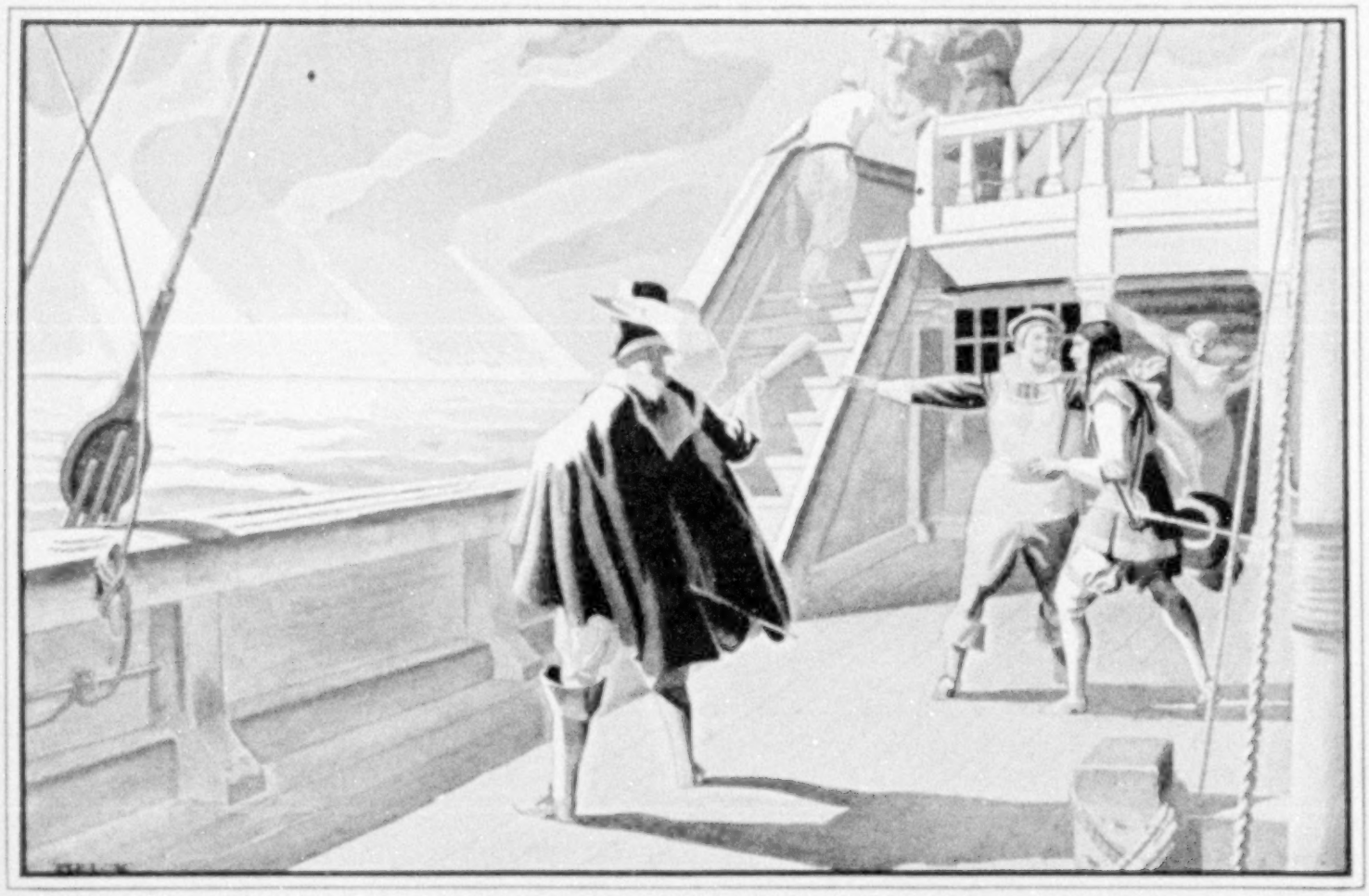
WHOLESOME, nourishing vegetable purees. Thick, hearty soups made with meat. Invigorating clear soups. All the popular favorites led by Tomato Soup and Vegetable Soup. And also less usual kinds that will give real freshness and variety to your daily menu. Complete list of soups on every label. Your grocer has, or will get for you, any Campbell's Soups you select. 12 cents a can.

This vim and dash, I always flash
When on my way to dinner.
With Campbell's fare to greet me there,
My appetite's a winner!

WITH THE MEAL OR AS A MEAL SOUP BELONGS IN THE DAILY DIET



Widening the Telephone Horizon

An Advertisement of the
American Telephone and Telegraph Company

IN THE memory of many now living, Alexander Graham Bell made the apparently rash prediction that the day would come when we could talk to other countries, even across wide expanses of water. That was shortly after the historic conversation between Boston and Cambridge, a distance of two miles.

Bell's vision was made a reality when in 1926 New York and London spoke together in two way conversation, and when in 1927 this service was opened to the public between any point in the U. S. A. and Great Britain. Since then, Mexico has been brought into speaking distance; important cities of continental Europe have come within the voice horizon of the United States.

Even more important, the Bell System in the United States now embraces 18,500,000 telephones—a growth for the past year of more than 750,000.

We may now converse with each other from practically any point in this country to any other, and may talk beyond our borders and across the sea. That is measurable progress in widening America's telephone horizon.

"What is back of these bonds?"

When you buy bonds from The National City Company you get something more than dependable income and adequate security of principal. You get a broad choice of issues, and personal contact with bond men well qualified to help you select suitable offerings; you get quick service through a chain of investment offices in over fifty leading American cities, offices interconnected by thousands of miles of private wires; you get ready access to up-to-date information on your various bond holdings; and, finally, you get the broad benefits which come from dealing with an organization having a background of over a century of financial experience and maintaining close contact with investment conditions throughout the world.

Our monthly list of recommended issues will keep you informed on attractive current offerings. It will be sent upon request.

The National City Company

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Offices or representatives in the principal cities of the United States, Canada, Europe, China, Japan, India, Australia, South America, Central America and the West Indies.

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ONE MILLION SERVICE CALLS

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But—

To offer their services in explaining the terms of the policies, and to answer questions the insured might wish to ask—

RESULTS

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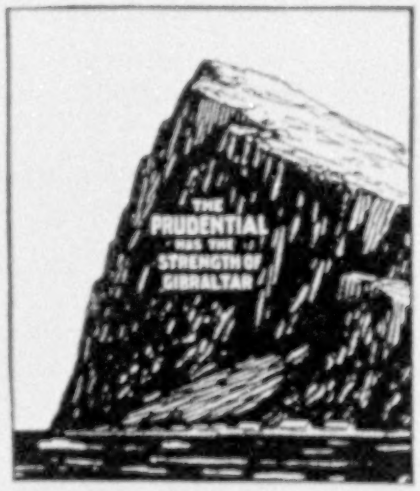

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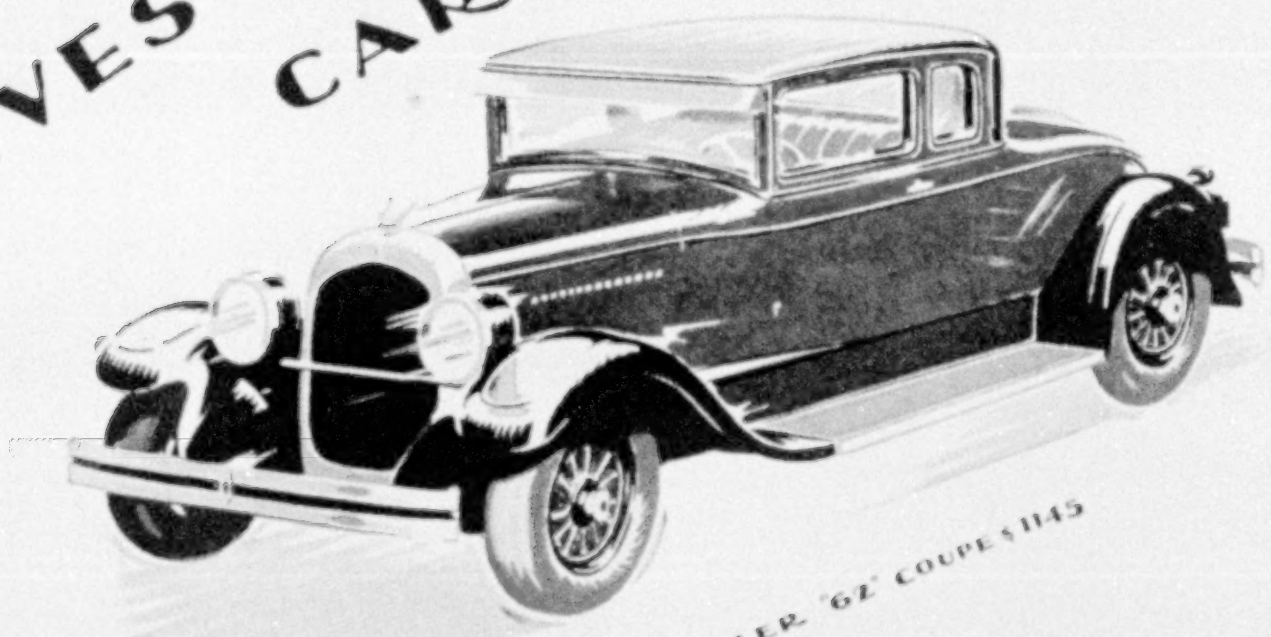

CHRYSLER "62" COUPE $1145

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The fact is, people are recognizing more and more how Chrysler engineering and manufacturing constantly show the way, how refinements and improvements for the very finest Chryslers are passed on, through the principle of Standardized Quality, to the Chryslers of lesser price.

The way that Chrysler sales keep climbing, always climbing—from 27th to 3rd place in 42 months—reflects the realization of motor car buyers that Chrysler manufacturing and engineering offer quality and value in every price field—from $670 to $3495—that no other car approaches.

* * *

Great New Chrysler "62"—Seven body styles, $1065 to $1235. Illustrious New Chrysler "72"—Seven body styles, $1545 to $1795. New 112 h. p. Chrysler Imperial "80"—Fourteen custom body styles by Chrysler, Dietrich, Locke and LeBaron, $2795 upwards. New Chrysler "52"—Seven body styles, $670 to $790.

NEW CHRYSLER "Red-Head" ENGINE *—designed to take full advantage of high-compression gas, giving 12% greater torque with greater speed, power, and hill-climbing ability; standard equipment on all body models of the 112 h. p. Imperial "80," also standard on the roadsters, and available at slight extra cost for other body types, of the "62" and "72."*

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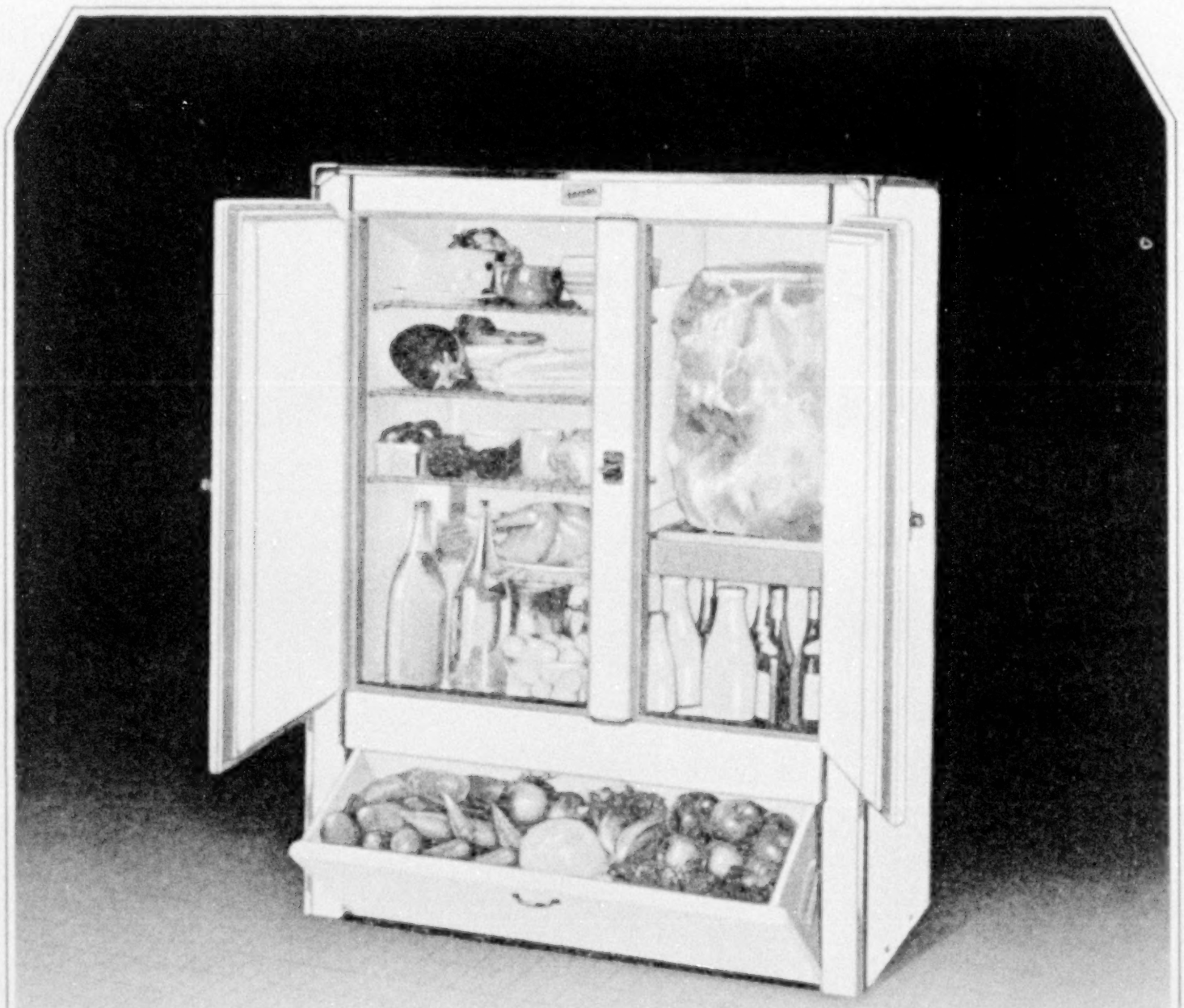
CHRYSLER "52"-"62"-"72"-112 H.P. Imperial "80"
40 BODY STYLES-$670 TO $3495

All prices f. o. b. Detroit, subject to current Federal excise tax



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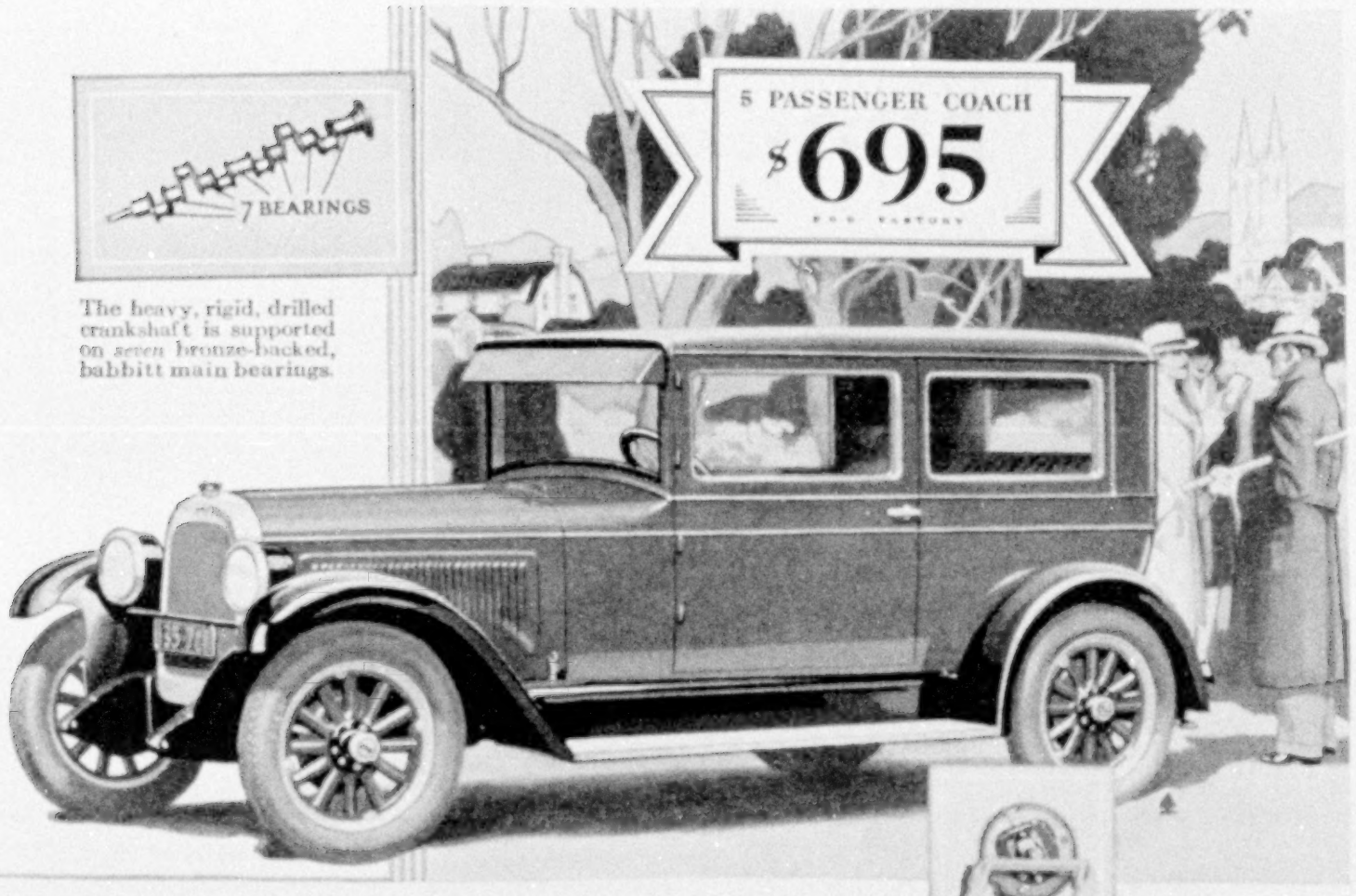

Officially approved mechanical-type 4-wheel brakes

A silent timing chain assures quiet operation.

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REVOLUTIONIZING all standards of six-cylinder motor car value—establishing a trend of design as advanced as that created by the Whippet in the four-cylinder field—the new Whippet Six is, in many respects, the most amazing car of the year. It offers, at a hitherto unheard of price, an array of mechanical features worthy of a Six costing two to three times as much. The new Whippet Six is smooth and silent; it is exceptionally powerful; it is flexible; it is exhilaratingly lively. Willys-Overland, Inc., Toledo, Ohio. Willys-Overland Sales Co., Ltd., Toronto, Canada.

Whippet Six Touring $615; Roadster $685; Coupe $695; Sedan $745.

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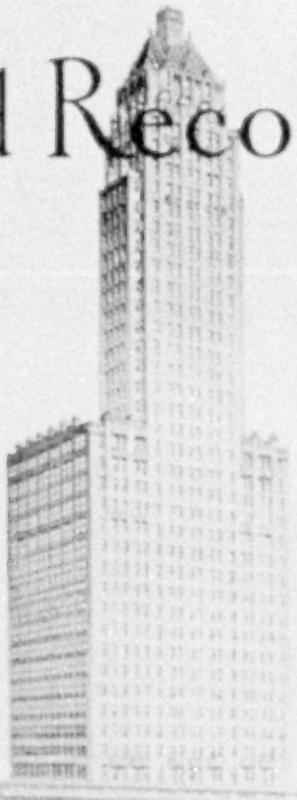

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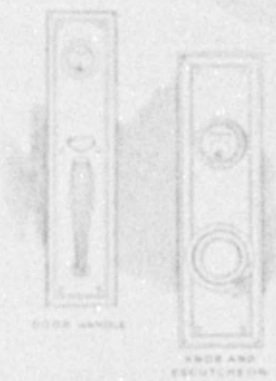

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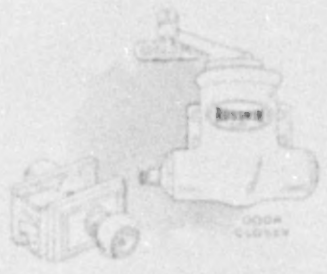

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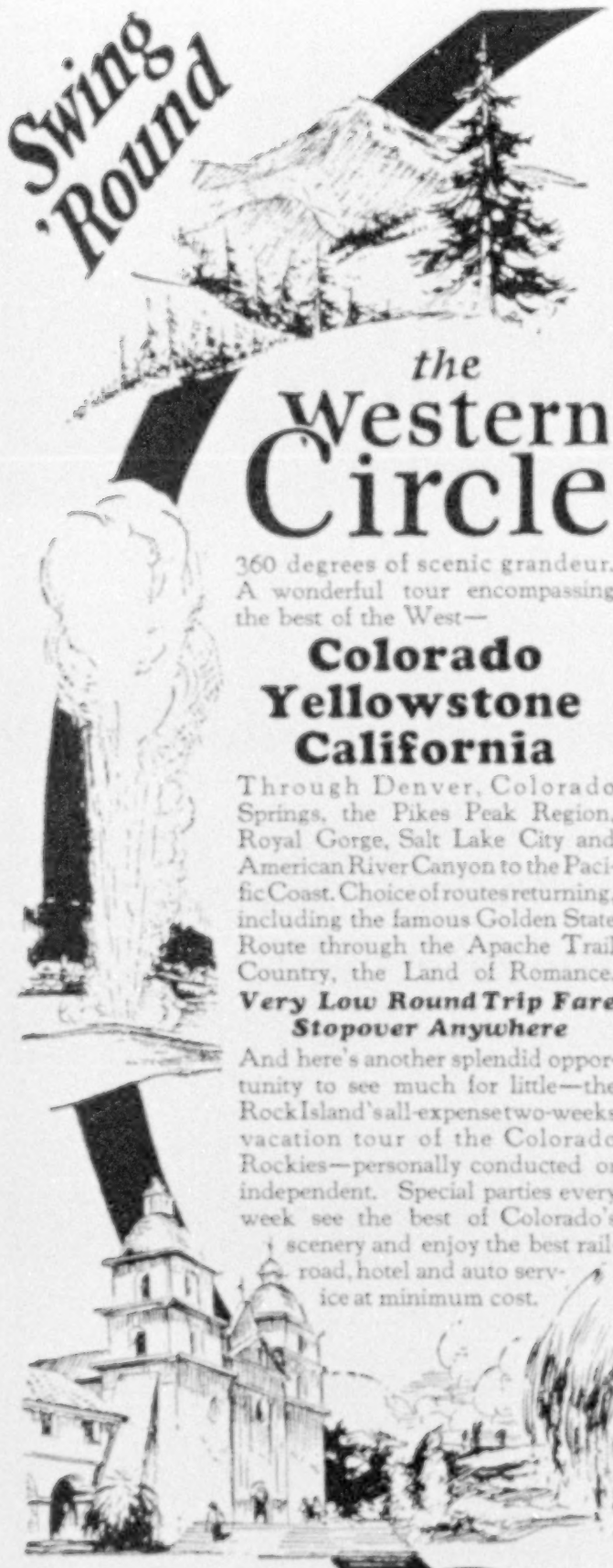

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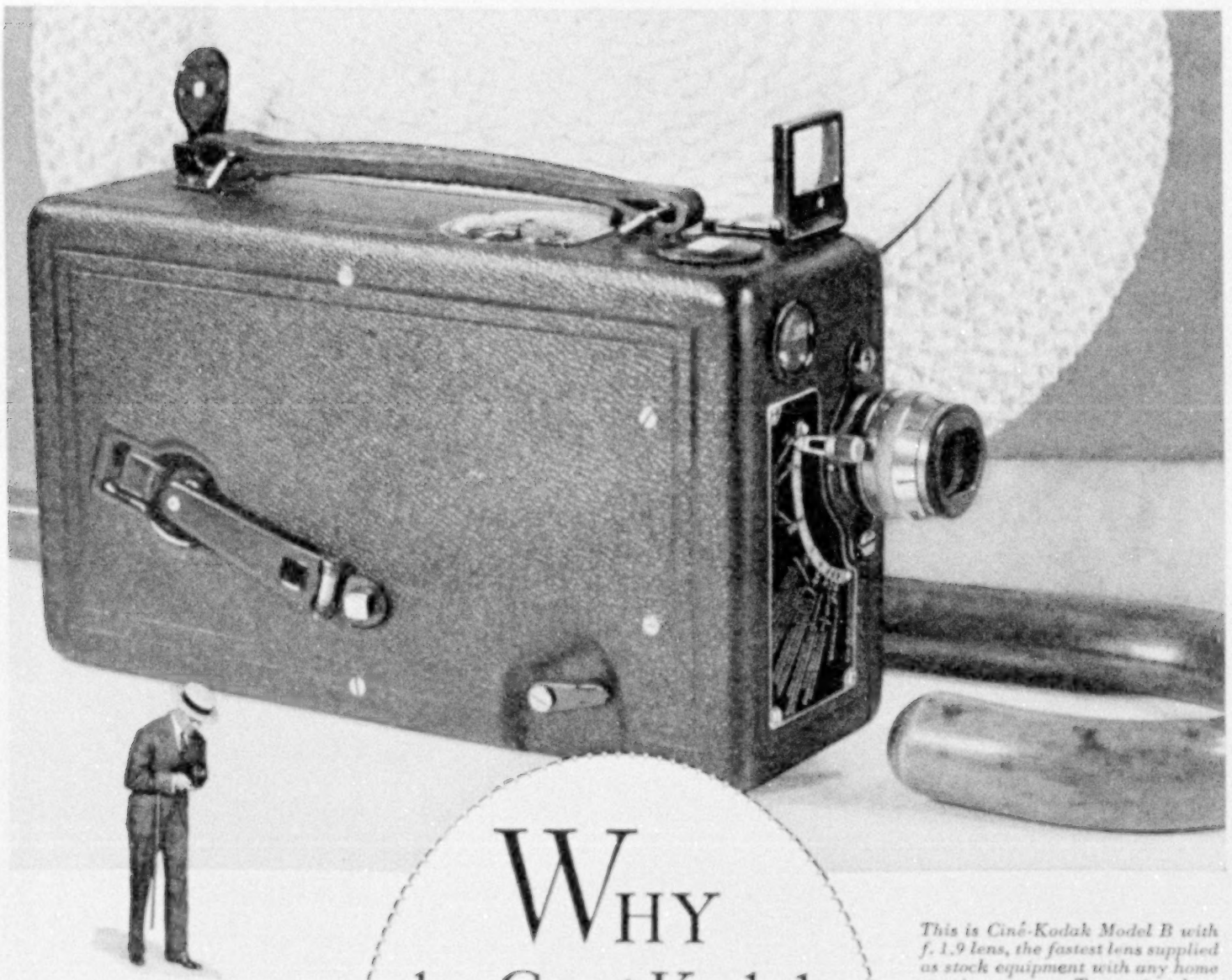

WHY the Ciné-Kodak *takes such Wonderful* Home Movies

This is Ciné-Kodak Model B with f. 1.9 lens, the fastest lens supplied as stock equipment with any home movie camera. Two other lens equipments are available—f. 6.5 and f. 3.5.

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PEOPLE everywhere rightly regard the Ciné-Kodak as the last word in amateur movie equipment. Specifically, it is the following features that make it so:

(1) Next to the lens mount is a semi-automatic diaphragm scale, a permanent part of the camera, which tells you just what to do under each light condition. (2) There is the usual eye-level sight finder but in the Ciné-Kodak it is so placed that you don't need to squint or remove hat or glasses. In addition, (3) there is a waist-level reflecting finder, invaluable when taking pictures of children or pets.

(4) The winding handle for the motor is permanently attached. You can't lose it or forget it. The very shape of the Ciné-Kodak is convenient; (5) it is easy to carry and (6) can be rested anywhere.

Because of this and because (7) the release can be locked in running position, you can actually take movies of yourself. (8) Loading and unloading are done with the greatest ease. There are no tight fits and the film is also completely protected. Everything is so arranged as to make threading the film and cleaning the mechanism simplicity itself. Moreover, no pains have been spared to make this mechanism strong and durable as well as convenient.

(9) The materials used are of the finest, the gate, for example, being chromium-plated, and (10) the camera itself handsomely covered with leather.

(11) Ciné-Kodaks are Eastman-made throughout. The lenses are made *for* the camera, not fitted *to* it and (12) not only is this equipment backed by the Kodak reputation but the user has the benefit of Eastman service, world-wide in scope.

(13) Ciné-Kodak embodies Eastman's forty years' experience in devising easy picture making methods for the amateur. Unbiased by the precedents and prejudices of professional cinema camera design, the men who made still photography so easy have now made home movie making equally simple for you.

(14) As an example of this simplicity, the *f.* 6.5 and *f.* 3.5 models require no focusing. And while the *f.* 1.9 pictured above, because of its extreme speed, does require focusing, this is easily accomplished by a simple twist of the lens barrel.

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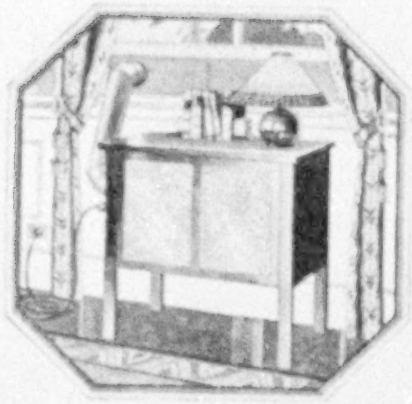

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(*Above*) IVY SAWYER, star, and JOSEPH SANTLEY, producer, of "Just Fancy," graciously respond to a prolonged curtain call. Their smiles, Pepsodent keeps gleaming white.

(*Above*) AWAITING LINDBERGH at Mitchell Field are Misses Leone Sprague, Hazel Fink, and Ross Coleman, Jr. Such smiles as theirs result from Pepsodent.

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Film on Teeth—*what it is and what it does*

Why film is charged with most cases of dull, "off-color" teeth. Why foremost dental authority urges its removal as the first step against serious tooth and gum disorders.

YOU will never know how gleaming white teeth can be, nor how healthy, until you have removed the film that clouds them. Ordinary brushing fails to remove that dingy film successfully.

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Film is that slippery coating that forms on teeth. Run your tongue across your teeth and you will feel it.

It clings to teeth, gets into crevices and stays. It absorbs the stains from food and smoking and gives that dull, tarnished look. Germs by the millions breed in film. It fosters bacteria of decay and serious tooth and gum disorders.

Film is the basis of tartar. And tartar plus germs is an established cause of pyorrhea.

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It acts further to firm the gums. The alkalinity of saliva is multiplied to combat the acids of decay. It cleanses hygienically in a way nothing else does.

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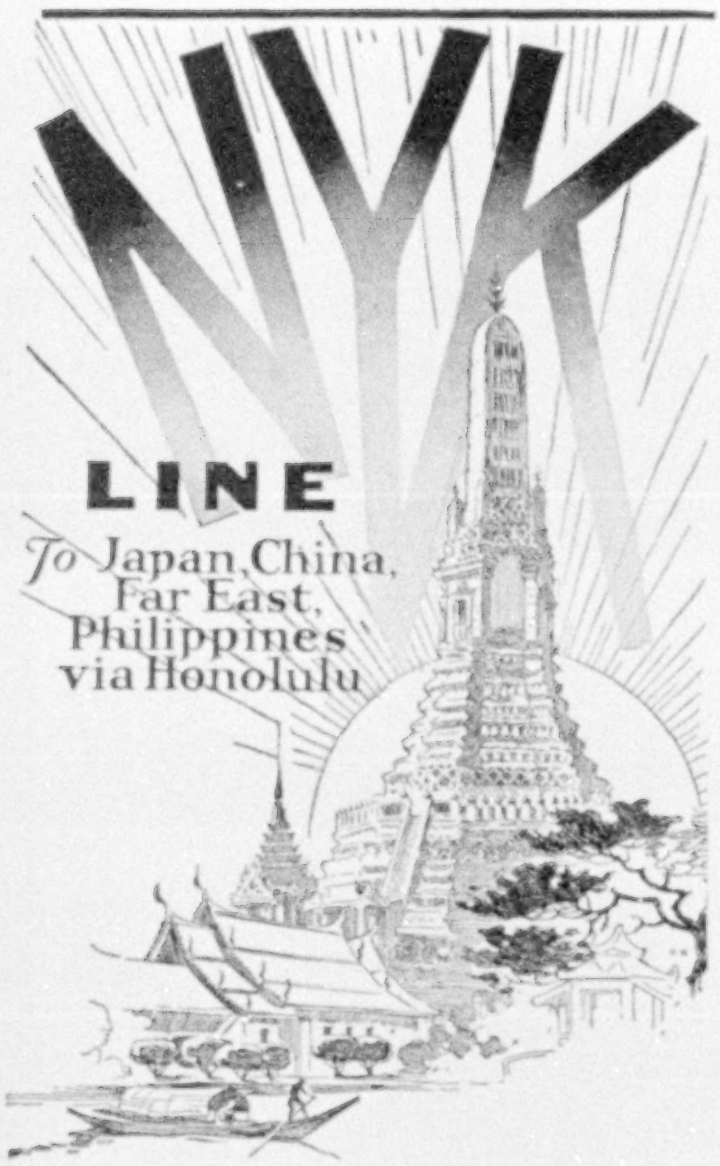

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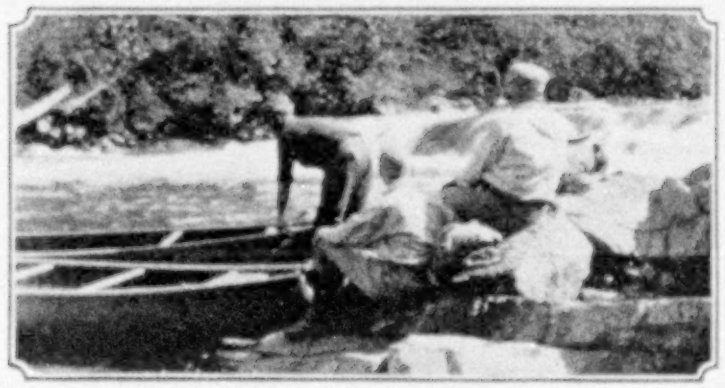

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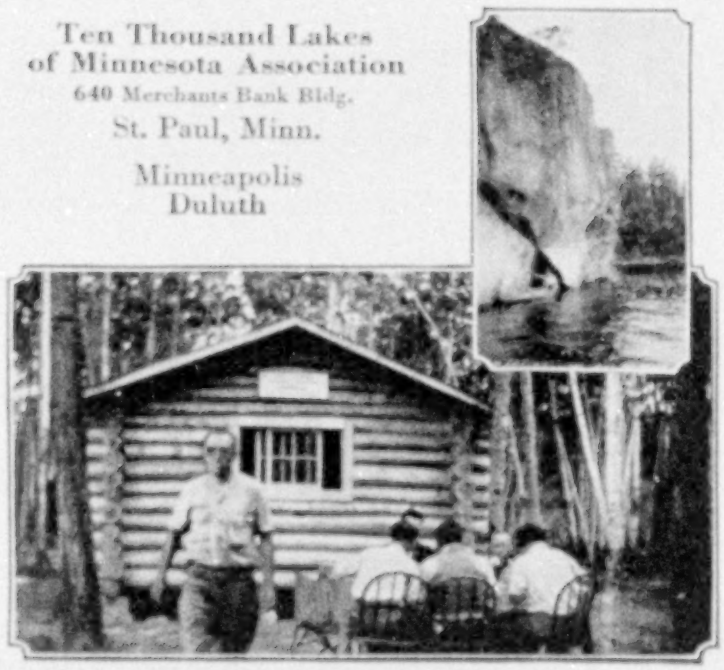

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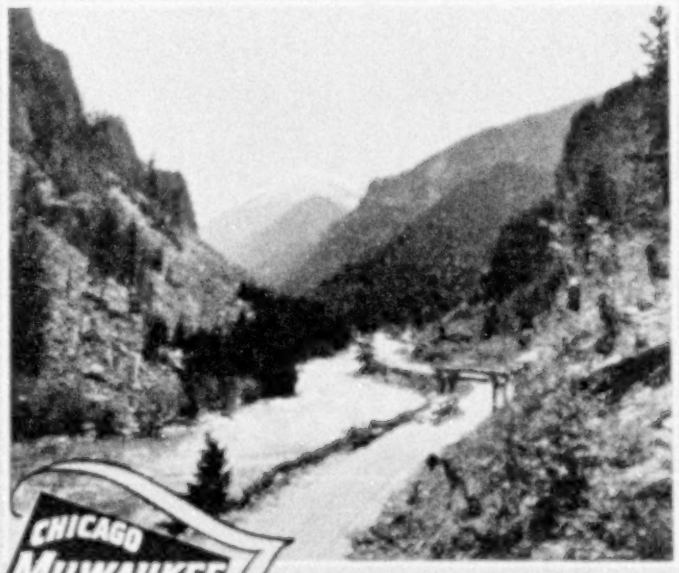

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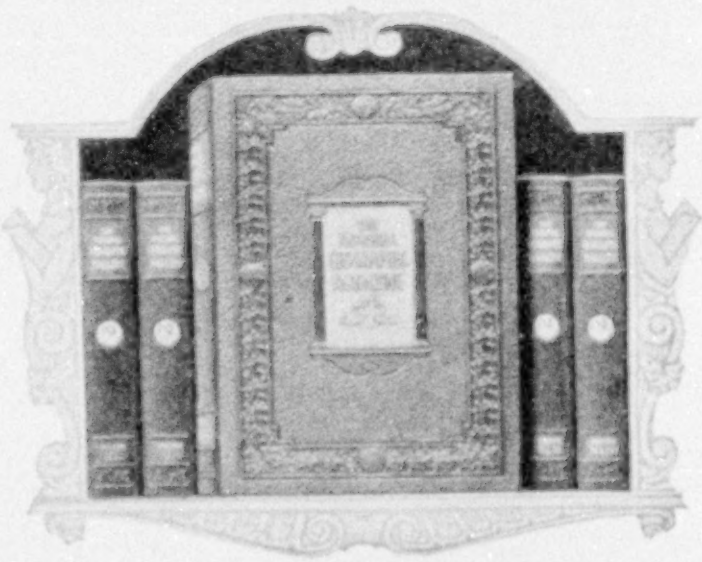

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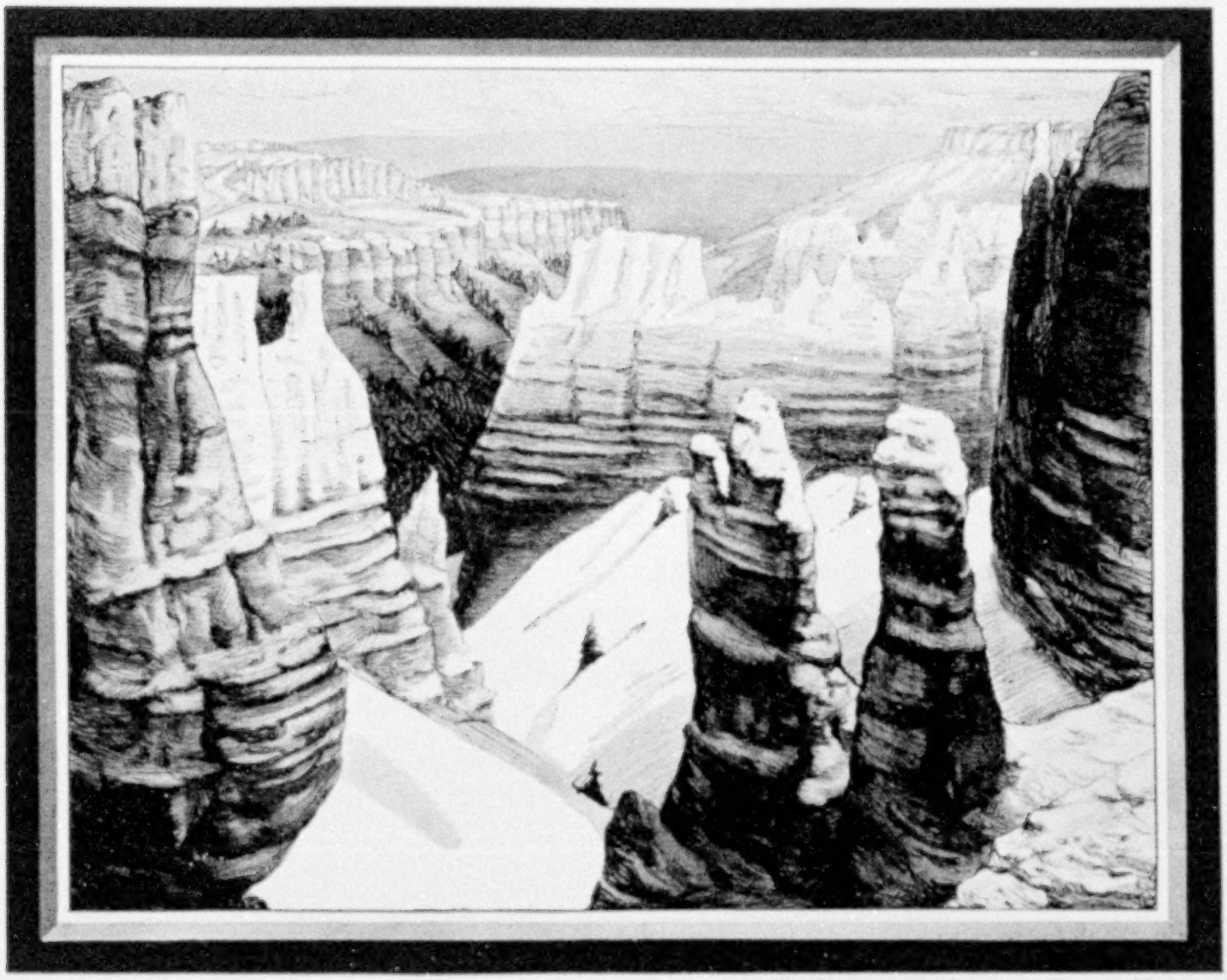

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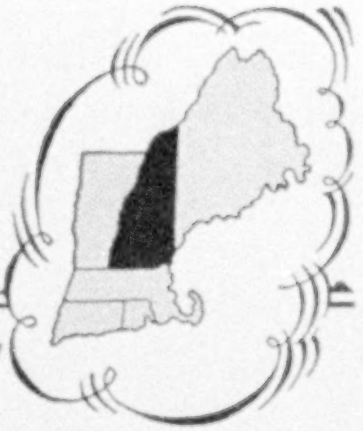

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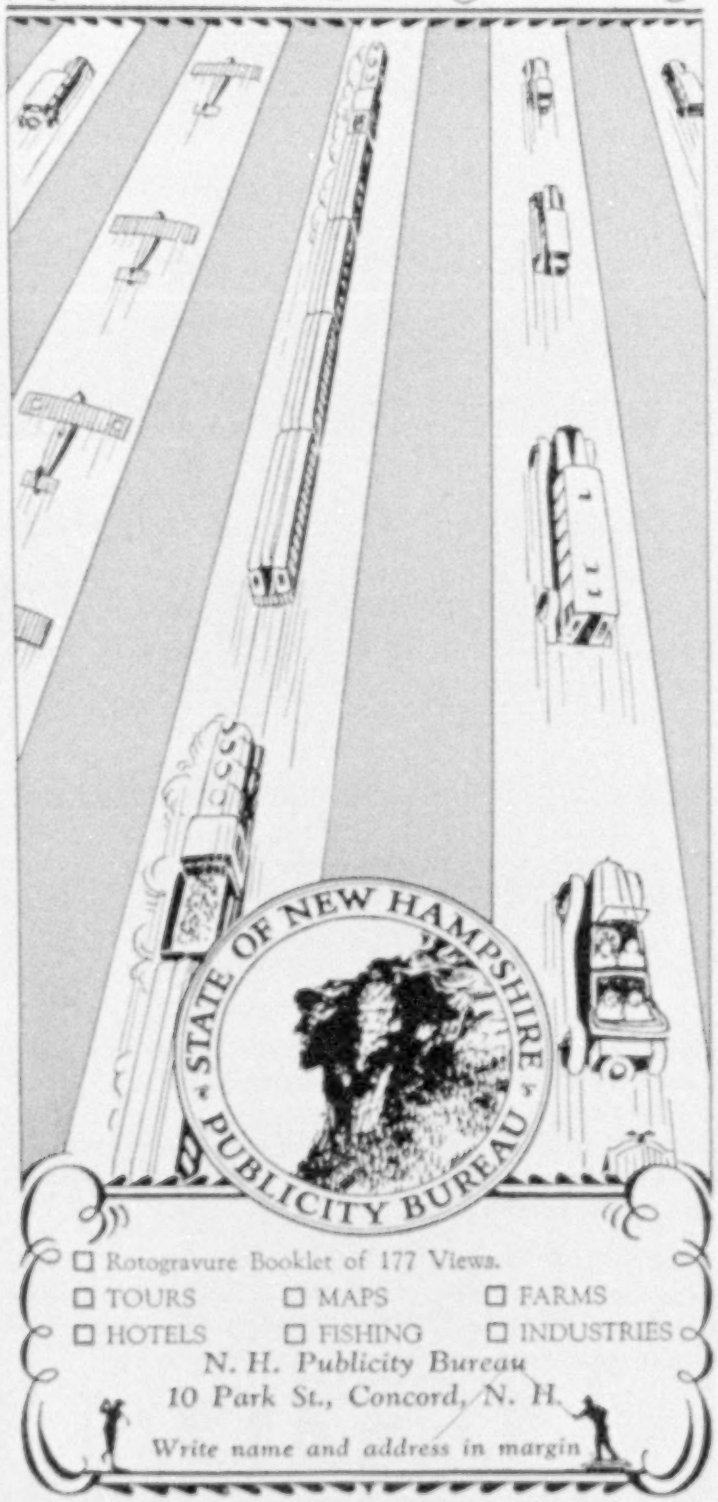

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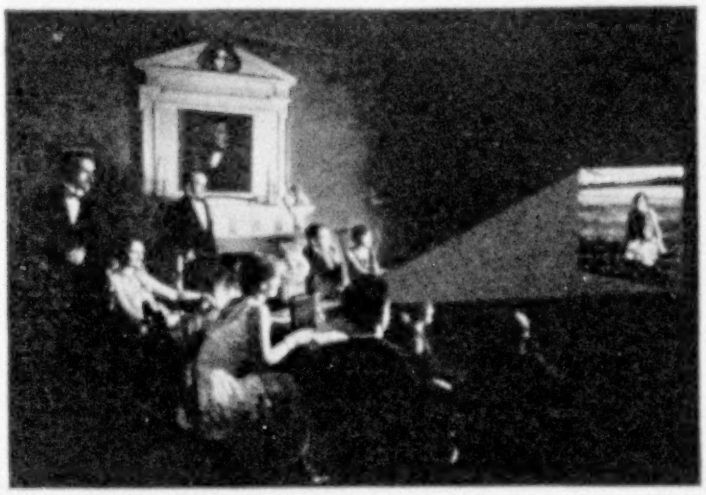

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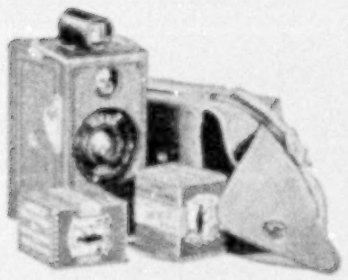

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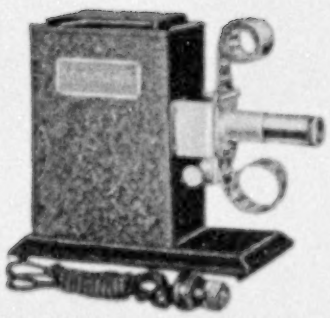

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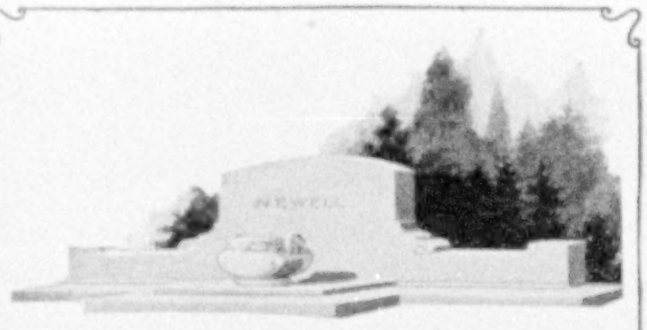

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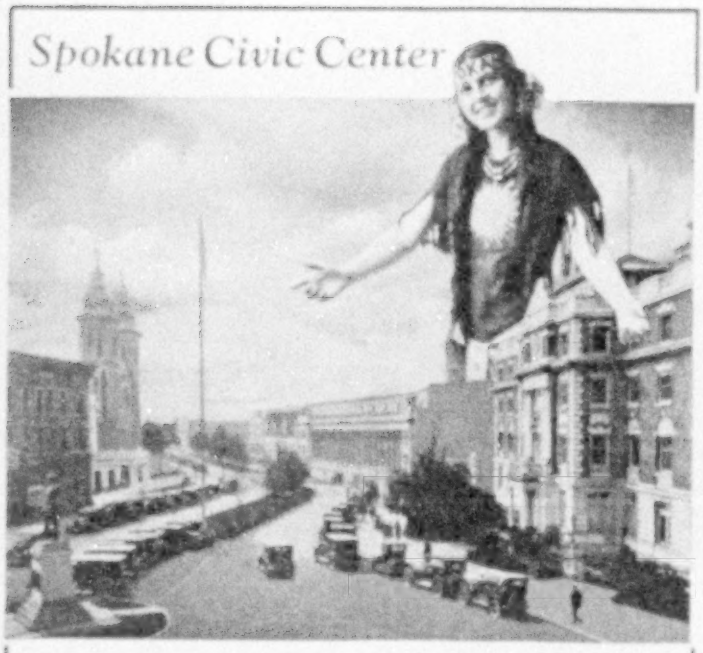

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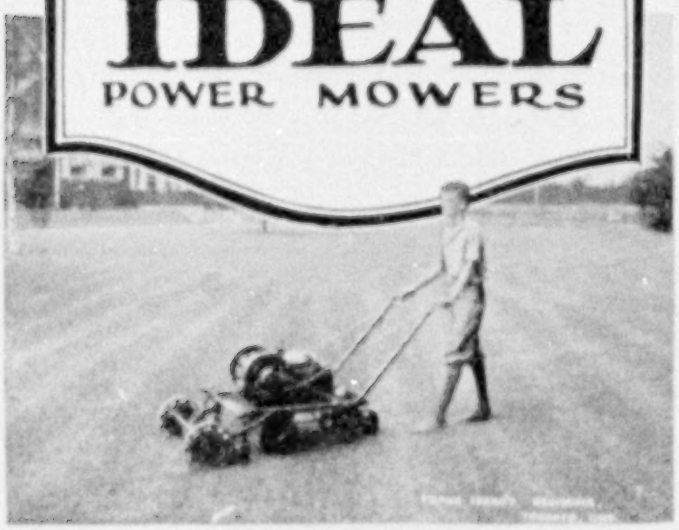

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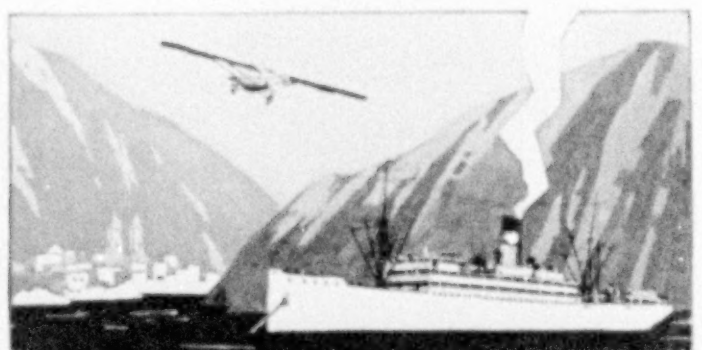

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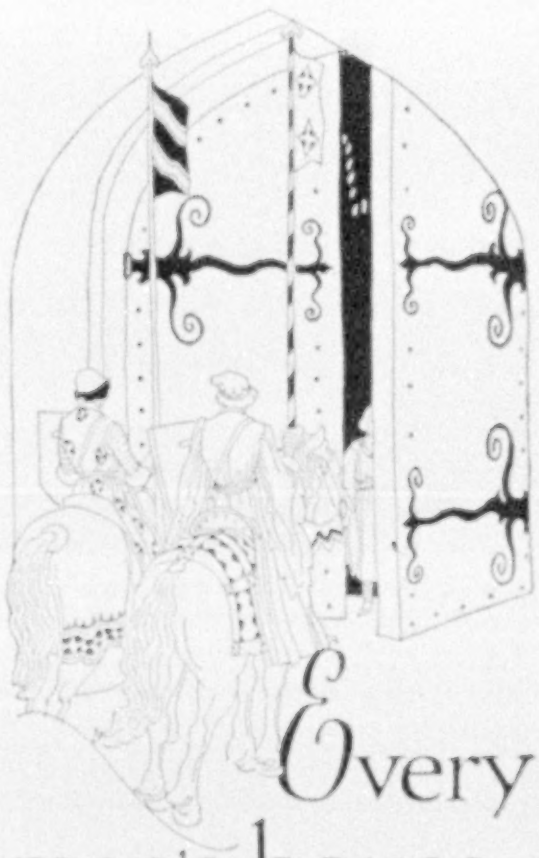

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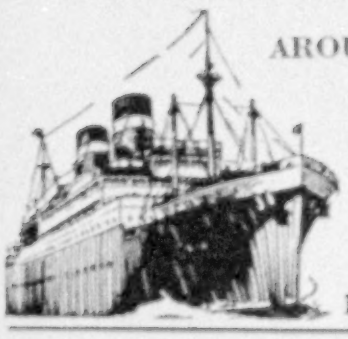

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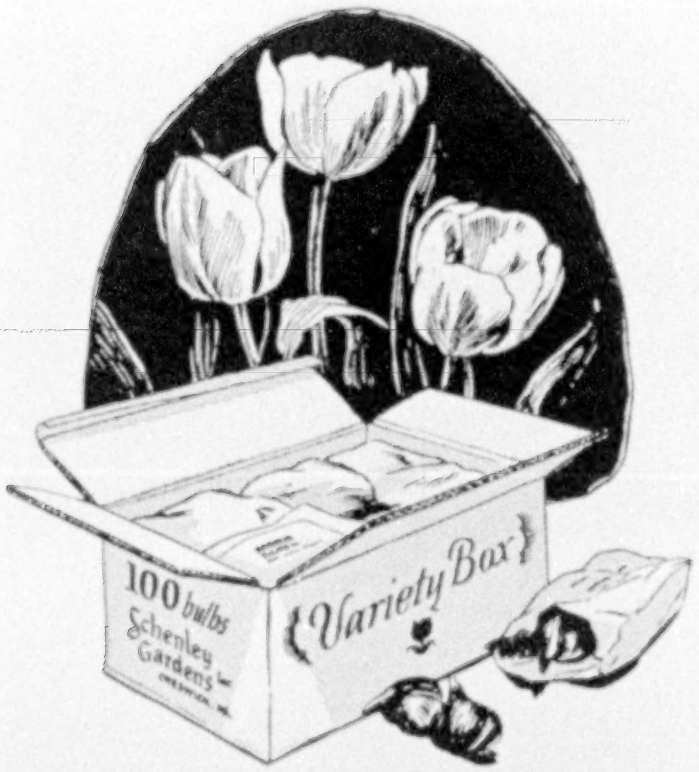

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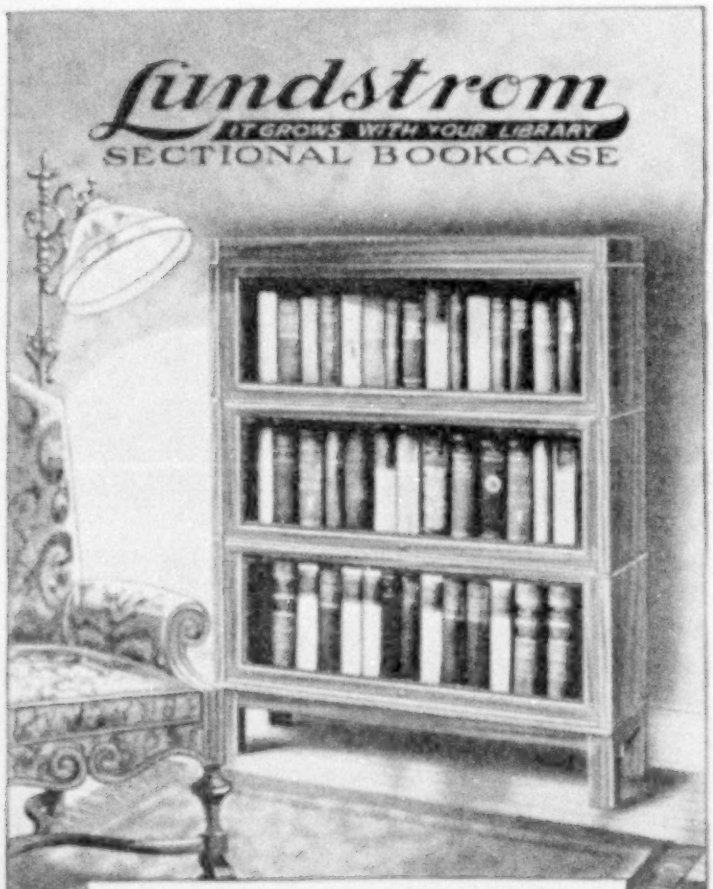

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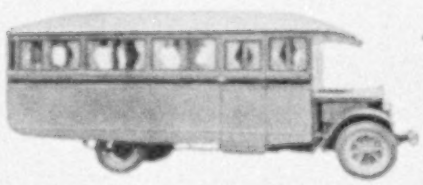

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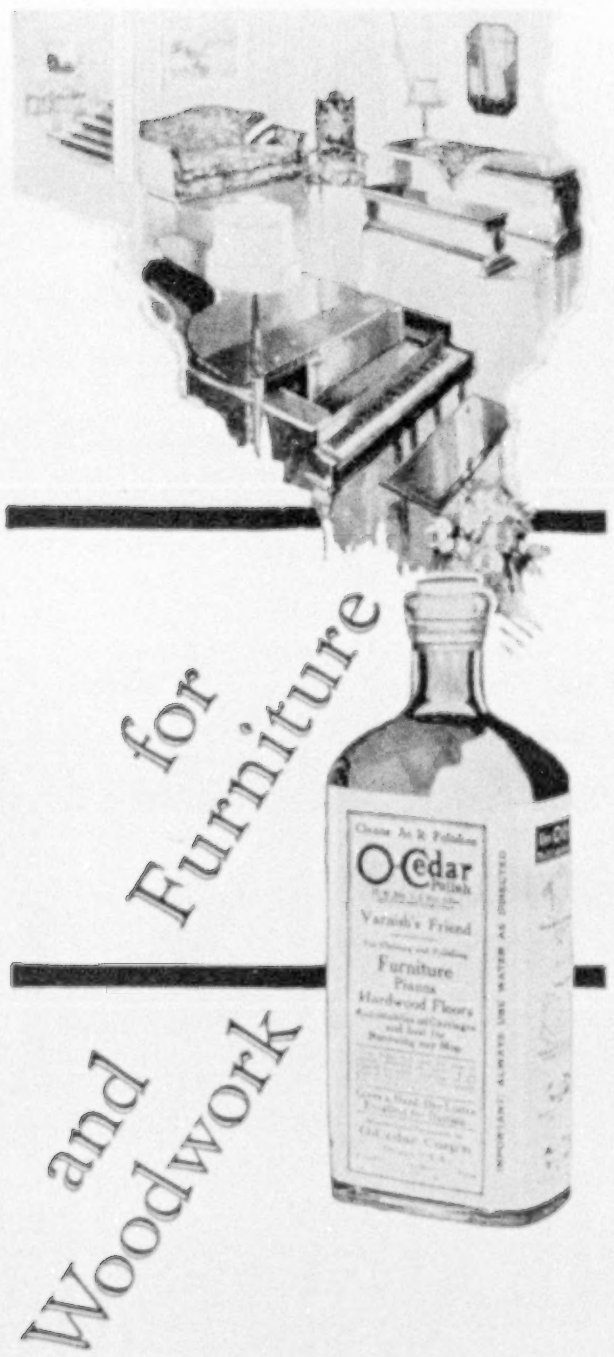

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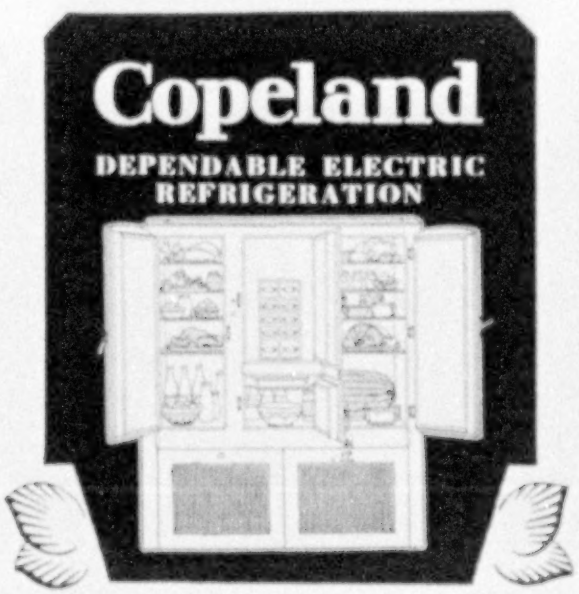

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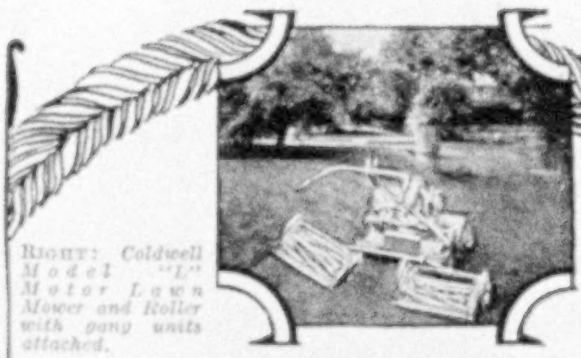

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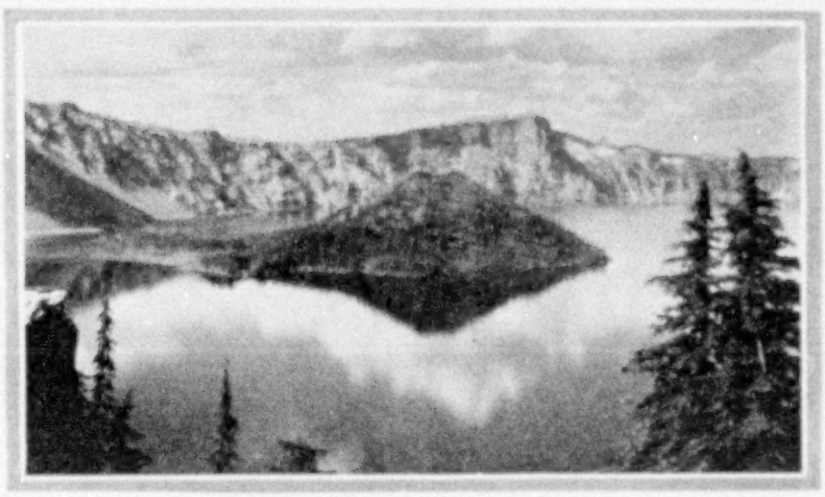

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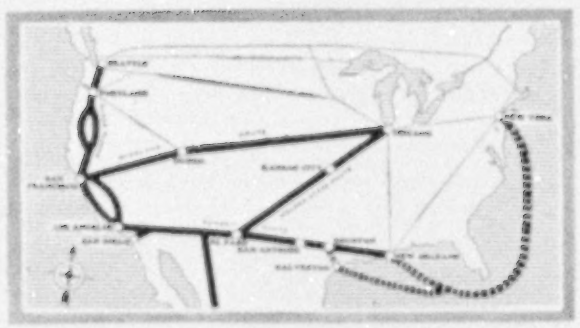

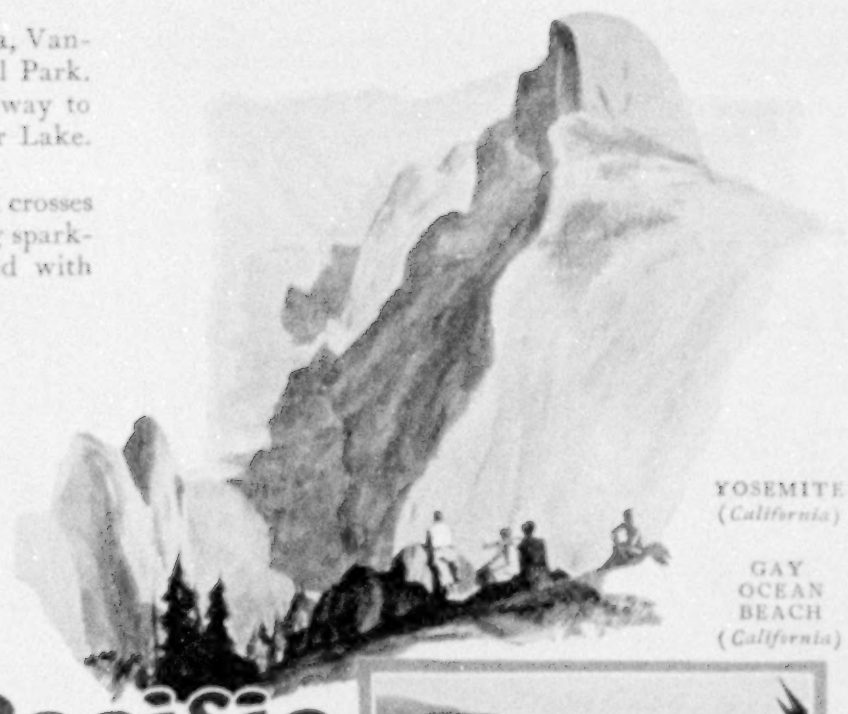

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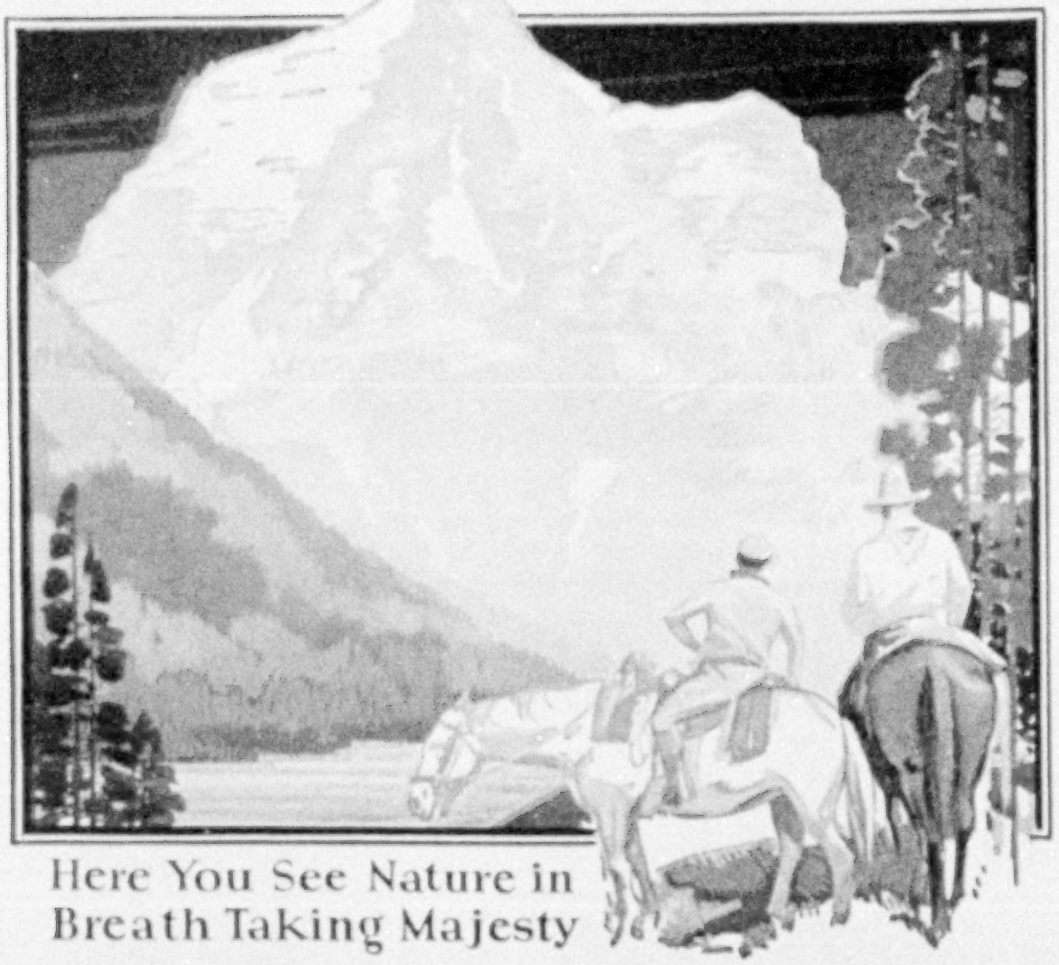

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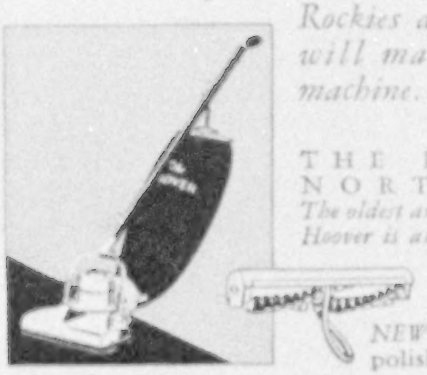

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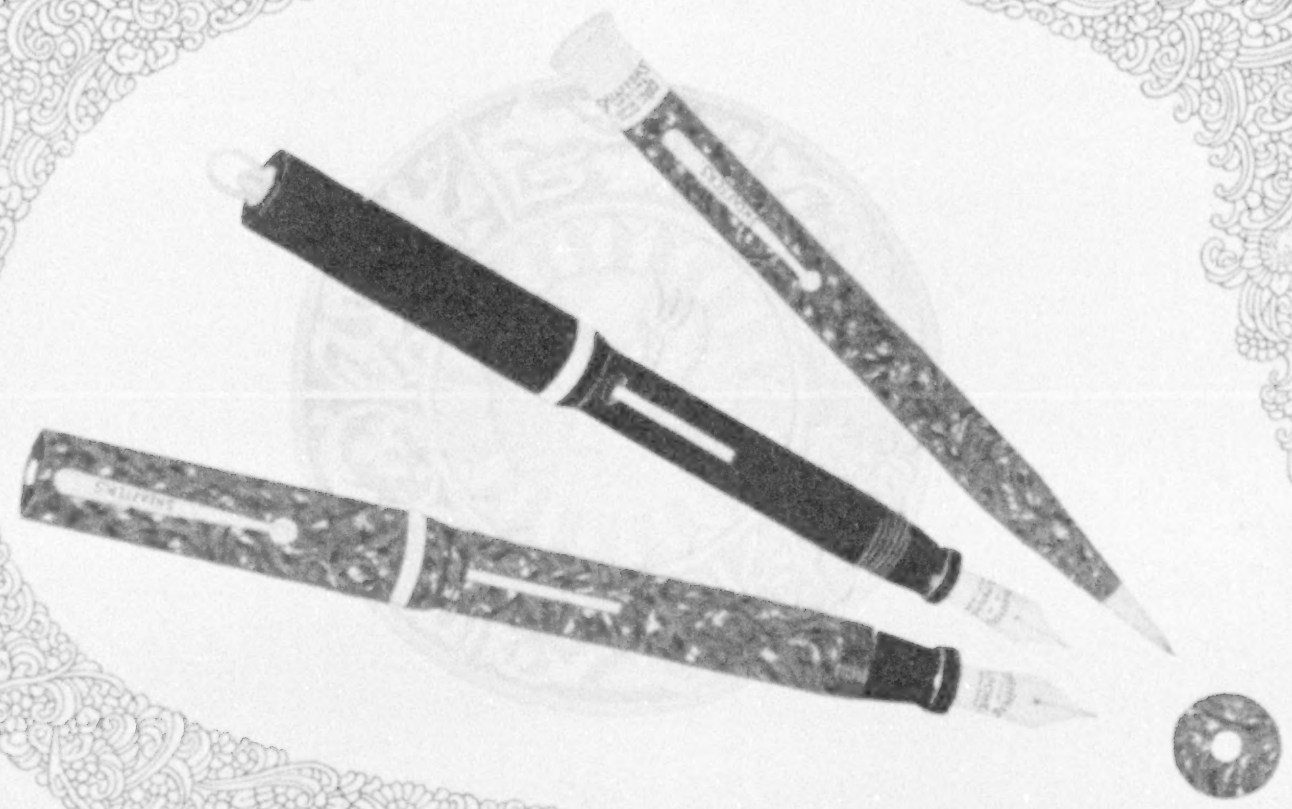

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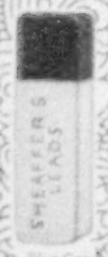

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